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ENTREPRENEURIAL BEHAVIOUR OF AGRI-BUSINESS OPERATORS IN KERALA

**By
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THESIS

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requirement for the degree**

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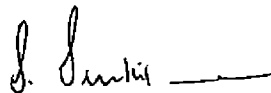
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DECLARATION

I hereby declare that the thesis entitled '**Entrepreneurial behaviour of agri-business operators in Kerala**' is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, fellowship or other similar title, of any other University or Society.

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Certified that the thesis entitled '**Entrepreneurial behaviour of agri-business operators in Kerala**' is a record of research work done independently by **Mr.Senthil Vinayagam, S.**, under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to him.

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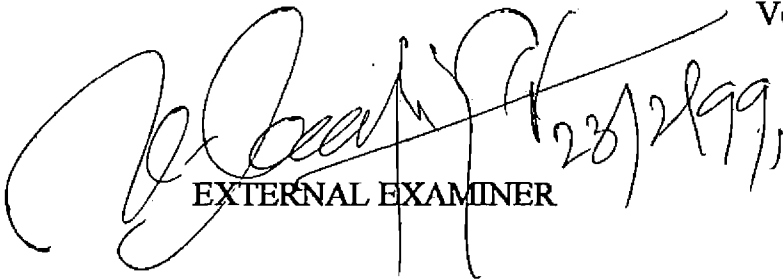
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Introduction

INTRODUCTION

“It is enterprise which builds and improves the world’s possessions. If enterprise is afoot, wealth accumulates, whatever may be happening to thrift; and if enterprise is asleep, wealth decays whatever thrift may be doing”.

- Keynes (1992)

The primary objective of developing countries is to achieve rapid, balanced and sustained rate of economic growth. In the Indian context, agriculture and allied sectors do play a major role in achievement of economic growth and socio-political objectives, being a predominantly agricultural country with nearly three-fourth of the Indian population residing in rural areas with agriculture as their main occupation.

Five-year plans undertaken by the government as well as the scientific break-through in the agricultural front have resulted in spectacular increase in agricultural production with a compound growth rate of 2.5 per cent per annum over the last three decades. The food production in the country has been a great leap from 50 million tonnes in the fifties to 191 million tonnes in 1997-98. However, with this comfortable agricultural situation, agricultural growth in India is affected by seasonal rains which poses serious problems in increasing production and productivity, particularly during the years when monsoon fails creating drought conditions which damage the crops. Again there are sometimes untimely, unseasonal, or excessive rains which also damage the crops. It is rightly said that agriculture in India is a gamble for the farmers. To combat this situation, ofcourse, there are already generated technologies, but remarkable growth in agriculture may

be obtained if proper entrepreneurial skill and hard work are geared up appropriately (Patel, 1995).

Advancement in agricultural technology can never bring in fruitful achievements until farmers become entrepreneurs. Substantial advancement in agriculture is said to have been a motivating factor for the farmers to go in for modern technologies of farming. In other words, agricultural advancement inspires farmers to be entrepreneurial, away from conventional and hereditary vocational system. This is referred to as progressivism due to entrepreneurship (De, 1985).

Schumpeter (1934) proposed the theory of economic development where in he visualised the entrepreneur as the key element in economic development by virtue of his role in introducing innovations. According to him 'an entrepreneur is the one who starts an industry/business/trade and (or) other services, undertakes risk, bears uncertainty and performs the other managerial functions of decision making and co-ordination'. He also stated that entrepreneurs are job creators instead of job seekers.

Entrepreneurship plays a critical role in the growth of our country which has abundance of natural and human resources. Besides being the vehicle of agricultural and industrial development, entrepreneurship can solve acute problems like unemployment, concentration of wealth in few selected hands, imbalance in regional development, increasing wastage of youth vigour in destructive activities etc. Nafziger (1971) remarked that entrepreneurship and other higher level human skills are key variables which link socio-cultural milieu with the rate of economic development.

The specialisation in agricultural areas, increase in production of agricultural crops, and commercialisation of agriculture formed an integral process for development of entrepreneurs in agricultural sector. According to Prasad (1995), the current phase of agriculture is ready to take off to industrial agriculture. The industrial agriculture has changed the farmer to become an entrepreneur, acquiring professional, managerial and organisational capacities to stand in growing global competition.

Commercialization and modernization of economy gradually increased the proximity and affinity between agriculture and industries. Ricardo (1962) treated the industrial manufacturer and farmer synonymously as entrepreneurs. In his words, the farmer and the manufacturer can no more live without profit than the labour. Mahajan (1983) reported there is considerable complementarity between agriculture and industry and the growth of one is dependent upon the growth of the other. Hence, both are equally important for the economic development of the country. Setty (1991) opined that in the process of simultaneous growth of industry and agriculture, the output of one serves as the input of the other and vice-versa.

A large majority of our people mistakenly believe that our farmers are small, educational status is low, capital investment is low and farming appears to be regarded as way of life and the development of entrepreneurship has no application in our agriculture (Gaikwad, 1978). As our agriculture is moving from subsistence to commercial level with the advent of agricultural technologies, the farmers take rational decisions on investment after assessing risk, other alternatives and possibilities of profit and loss than they did a few years ago. Ashok (1984) rightly stated that peasant oriented occupations promote the national economy and these occupations are becoming more complex and complicated and therefore, development of entrepreneurial ability is a key to face these problems. All these

factors call for development of entrepreneurship on the part of farmers to survive and succeed in the present day world of competition.

Realising the importance of entrepreneurship in agriculture, Forster (1953) described farming as a business, had identified farmer as an entrepreneur. Sethy (1982) reported that farmers are having entrepreneurial characteristics in their adoption of improved farm technology. De (1985) concluded that to conduct a farm as an enterprise or business, the identity of person must change from a farmer to that of a farm business operator or entrepreneur. Harper and Vyakaranam (1988) and Singh and Krishna (1994) considered farmers also as entrepreneurs.

The importance of agri-business in nation's development is being increasingly recognized and financing for agri-business enterprise has grown considerably in recent years. Policy makers have rediscovered that creating a strong agri-business sector is prerequisite to achieve viable industrialisation. Agri-business can only be as strong as its agro-industry and vice versa. In developing countries, both the agricultural sector and on-farm, off-farm components become increasingly significant and preserve the overall economic contribution of agri-business (Austin, 1992).

Past research studies conducted on the entrepreneurial behaviour of small farmers by Nandapurkar (1982) and Raghavacharyulu (1983), Porchezian (1991) on entrepreneurial behaviour of farmers having diversification in agriculture, determinants of entrepreneurial success among agricultural entrepreneurs by Ahmed and Kakoty (1993), Singh and Krishna (1994) on entrepreneurial behaviour of farmers producing cash crops, Jayalekshmi (1996) on entrepreneurial behaviour of women entrepreneurs in food processing units and mushroom cultivation, have highlighted the entrepreneurial characteristics of farmers and the need for improving the entrepreneurial traits in them.

In Kerala, the state government has come out in a big way with a number of promotional programmes for agri-business entrepreneurs, to motivate and train them through organised programmes for undertaking risk bearing capacity and to give them incentives through different agencies and institutions like District Industries Centre, Krishi Bhavans, Kerala Horticultural Development Programme, Agri-business consortium, HortiCorp etc. Thus, a network of promotional agencies and institutions have been setup at state level to promote entrepreneurship in agri-business, through support measures in the form of policy, finance, infrastructure, training etc. However, the efforts made by promotional agencies are yet to bring about the desired impact among the entrepreneurs.

On the whole, in the trade scenario of Kerala there is steady increase in the number of entrepreneurs which has been felt in the state economy (Beegam and Sarngadharan, 1994). The emergence of entrepreneurs, it seems, has been an outcome of the encouragement from policy makers and development agencies to get self-employed, by availing themselves of the preference and concessions extended by the government department and agencies.

Against the background described above, it was felt that a study on the entrepreneurial behaviour of agri-business operators in the state would throw light on various aspects of farm entrepreneurs such as the relationship of behavioural and situational factors with entrepreneurial behaviour, the level of agri-business performance, the constraints perceived by the agri-business operators will be of much use to the promotional agencies in formulating strategies for the development of farm entrepreneurs. Thus, the study was formulated with the following specific objectives.

Objectives of the study

- i) To measure the entrepreneurial behaviour of agri-business operators using a standardised index,
- ii) To relate the entrepreneurial behaviour of the agri-business operators with their agri-business performance,
- iii) To identify the behavioural and situational characteristics of agri-business operators which influence their entrepreneurial behaviour,
- iv) To identify the constraints which affect the entrepreneurial behaviour of agri-business operators,
- v) To suggest strategies for entrepreneurship development in the agri-business sector of Kerala.

Scope of the study

In the study, the entrepreneurial behaviour of agri-business operators is viewed in relation to various dimensions of entrepreneurship. The index developed could be used in measuring entrepreneurial behaviour of agri-business operators in any agri-business enterprise with suitable modifications. The dimensions highlighted in the study could form a broad frame in formulating strategies and contents of various entrepreneurial trainings. The findings of the study would also be helpful in identifying the most important entrepreneurial behaviour which need support and encouragement by the promotion agencies. The study also throws light on the behavioural and situational factors of agri-business operators associated with the entrepreneurial behaviour, their personal profile, and their business performance.

Limitations of the study

As the study formed a part of the Doctorate degree programme, the time and other resources at the disposal of the researcher were limited. These limitations determined the restricted selection of districts and Krishi Bhavans as the locale of the study and also the sample size. The identification of respondents and extraction of information from them were carried out with much concerted efforts by the researcher who is not well versed with the state language. However, careful and rigorous procedures have been adopted to carry out the research as objectively as possible.

The study aimed to cover only eight selected agri-business enterprises whose entrepreneurial behaviour need not resemble that of vegetable farmer or mushroom cultivation units or curry powder units. Hence generalization of the findings would be directly applicable to the selected agri-business units only.

The agri-business performance was assessed based on the information related to previous years. Here, the researcher had to depend on information which the respondents gave from their memory (recall data) as in the case of cost of expenditure, income, labour intake and other details. By the very nature of things, some degree of error would have crept into such data. However, every effort was made to ensure that the data provided by the farmers are as reliable as possible.

Presentation of thesis

The thesis is presented in five chapters as given below:

The first chapter deals with the introduction, wherein the statement of the problem, objectives, the scope and limitations of the study are discussed. The second chapter covers the review of studies related to the present investigation. The

third chapter relates to the details of the methodology used in the process of investigation. In the fourth chapter, the results and discussions are clubbed and in the fifth chapter the summary, implications and conclusions of the study are given. The references, appendices and abstract of the thesis are given at the end.

Review of Literature

2. REVIEW OF LITERATURE

The objective of this chapter is to give an orientation to the concepts pertaining to entrepreneurial behaviour and agri-business and to present the different research findings available in the area of the study. With this in mind, a search into past research efforts has been made with the aim of locating the problem in a theoretical perspective. The literature is presented under the following heads.

- 2.1 **Entrepreneurs and Entrepreneurship - A conceptual orientation**
- 2.2 **Concept of entrepreneurial behaviour**
- 2.3 **Dimensions of entrepreneurial behaviour**
- 2.4 **Behavioural and situational factors influencing entrepreneurial behaviour**
- 2.5 **Concept of agri-business, agri-business operator and agri-business performance**
- 2.6 **Constraints influencing entrepreneurial behaviour**
- 2.7 **Conceptual model of the study**

- 2.1 **Entrepreneurs and Entrepreneurship - A conceptual orientation**
- 2.1.1 **Entrepreneur**

The word entrepreneur appeared for the first time in the French language 'Entreprendre' meaning to undertake. In France, in the sixteenth century, a leader of the military expedition was referred to as entrepreneur.

Schumpeter (1934) defined entrepreneur as an innovator who works out new combinations of the factors of production and distribution.

Forster (1953) described farming as a business and identified farmer also as an entrepreneur.

McClelland (1961) pointed out that the man who organised the firm and/or increased its productive capacity was an entrepreneur.

Hagen (1964) described the entrepreneur as an economic man who tries to maximise his profits by innovations.

Florence (1969) opined that entrepreneur is a person who makes prime decisions.

Joshi and Kapur (1973) described farm entrepreneur as the person (can be group of persons also), who thinks of, organises and operates the business and is responsible for the results.

Taylor and McMillan (1973) indicated that the entrepreneur is 'out oriented' towards changing and enlarging the firm. He is an imaginative creator of new possibilities and willing to take risk under conditions of great uncertainty.

Leeds and Stainton (1978) defined entrepreneur as a person who initiates production, takes decision, bears risks, involves and organises and co-ordinates the other factors.

Herdero (1979) described agricultural entrepreneur as a person who introduces changes which directly or indirectly lead to higher agricultural output.

Herdero (1979) and Harper and Vyakaranam (1988) considered farmers also as entrepreneurs.

Carland *et al.* (1984) posited that an entrepreneur should be one who established a business for the purpose of profit and growth who was characterised by innovative behaviour and who employed strategic management practices.

Sharma (1985) defined entrepreneur as one who detects and evaluates the new situation in his environment and directs the making of such adjustments in the economic system as he deems necessary.

Hoy (1987) noted that a popular image of a rural entrepreneur was '... independent-natured, risk taking, achievement oriented, self-confident, optimistic, hard working and innovative'.

Patel (1987) defined entrepreneur as the person who catalyses resources, risks and manages them so as to establish a viable sustained employment generating entity.

Dixit (1988) regarded a true entrepreneur as one who germinates the concept, takes initiative, seizes the opportunity, bears the risks, promotes the organization and manages it inspite of odds to achieve the set goals.

Herbert and Link (1989) defined farmer as an entrepreneur who plants and tends the crops without any certainty of whether or not they will survive to harvest or for the price they will bring.

Hamilton (1990) opined that entrepreneurs were risk takers, not wild eyed gamblers but rational individuals who considered their knowledge and skills as dramatic risk reduction elements.

Rahman and Kulshrestha (1990) defined entrepreneurs as persons who initiate, organise, manage and control the affairs of business units that combine the factors of production to supply goods and services, whether the business pertains to agriculture, industry, trade or professions.

Porchezian (1991) suggested definition of a farm entrepreneur as one who maintains one or more enterprises like poultry, dairy, sericulture apart from the main occupation of crop husbandry.

Khan (1992) stated that entrepreneurs are the men of skills, experiences, dexterity, expertise and flair.

Mohiuddin (1993) defined an entrepreneur as one who undertakes to organise own and run an enterprise.

Narendrakumar and Jayachandran (1994) defined entrepreneur as a person who senses an opportunity for economic gain in the socio-economic spaces around him and initiates activity leading to production through interaction of men, machine, materials and money.

Sarmah and Singh (1994) reported that entrepreneur is one who can (i) transform raw materials into goods and services, (ii) utilize physical and financial resources effectively for creating wealth, income and employment, and (iii) innovate new products, standardise or upgrade existing products for creating new markets and new customers.

According to Desai (1995), an entrepreneur is one who can see possibilities in a given situation, where others see none and has the patience to work out the idea into a scheme to which financial support can be provided.

Goswami (1996) defined entrepreneur as one who wants to set up a commercial venture on his own with determination, zeal, enthusiasm and with basic knowledge of the business he wants to set up and above all he is willing to take risks on his own.

In the study, the term agri-business operator is defined as an individual who undertakes and run the agri-business enterprises such as farming, on-farm agri-business units and off-farm agri-business units with commercial perspectives and motives. From the analysis of various definitions of the term entrepreneur, it could be possible to consider agri-business operators also as entrepreneurs.

2.1.2 Entrepreneurship

Entrepreneurship is a purposeful behavioural adaptation launched for initiating, promoting and maintaining economic activities for the production and mobilisation of monetary resources. The emergence of entrepreneurship depends upon economic, social, cultural, religious and psychological factors.

Agarwal (1975) defined entrepreneurship as the ability to identify the resources to perceive their economic potential, the ability and willingness to utilise these resources and to invest in their development deferring immediate rewards in favour of investment.

Sharma (1975) stated that entrepreneurship refers to a set of attributes which the entrepreneurs possess and those which they perform in relation to expansion of their enterprises.

Pareek and Nadkarni (1978) stated that the entrepreneurship is influenced by the individual, the environment and the support systems.

Rao and Mehta (1978) described entrepreneurship as a 'creative' and 'innovative' response to environment.

According to Cole (1979), entrepreneurship is a purposeful activity of an individual or a group of associated individuals undertaken to initiate, maintain or organise a profit oriented business unit for the production or distribution of economic goods and services.

Mishra and Sinha (1980) opined that entrepreneurship is a quality which can be acquired by an individual.

Schultz (1980) defined entrepreneurship as the ability to deal with disequilibrium rather than the ability to deal with uncertainty.

Drucker (1985) defined entrepreneurship as perceptiveness to change and the entrepreneur as one who always searches for change, responds to it and exploits it as an opportunity.

Stevenson *et al.* (1985) defined entrepreneurship as the process of creating value by pulling together a unique package of resources to exploit an opportunity.

Watkins and Allen (1987) defined entrepreneurship as a characteristic or set of characteristics associated with persons who possess the drive, capabilities and organizational skills to obtain and manage the variety of inputs necessary to successfully undertake a venture¹:

Reddy (1989) pointed out that entrepreneurship is a mental urge to take risk in the face of uncertainties and intuition, and capacities of seeing things in a way which afterwards proves to be true.

Timmons (1989) defined entrepreneurship as the ability to create and build something from practically nothing. It is initiating, doing, achieving and building an enterprise or organisation.

According to Khan (1992) entrepreneurship is the basic business acumen of a successful entrepreneur.

Vijayalakshmi (1992) reported that entrepreneurship is the ability to co-ordinate and organise, manage and maintain and reap the best out of even the worst situations.

Sarmah and Singh (1994) opined that entrepreneurship is essentially a function, creativity and behaviour manifestation of a person for shifting resources from areas of low productivity to higher productivity.

According to Desai (1995) entrepreneurship is the propensity of mind to take calculated risks with confidence to achieve a pre-determined business or industrial objective.

Jain (1996) defined entrepreneurship as the ability to discover, create or invent opportunity and exploit them to the benefit of the society which in turn brings prosperity to the innovator and his organisation.

Banerjee and Talukdar (1997) defined woman entrepreneurship as the extent of qualitative and innovative activities carried out by a woman entrepreneur in her respective enterprise to increase production spontaneously, where her activities are also a manifestation of internal mental events and processes.

From the above explanations it could be inferred that entrepreneurship is the basic and purposeful activity required for the success of any farm enterprise. Entrepreneurship has been considered in this study, as the ability of farm entrepreneur to identify and utilise the resources by perceiving their economic importance to create something new and (or) to increase the existing level of production in thier enterprises.

2.2 Concept of entrepreneurial behaviour

Minzberg (1976) stated that entrepreneurial behaviour is characterised by active search, expansionist outlook and decision making.

Bruno and Tyebjee (1982) defined entrepreneurial behaviour as a function of the characteristics of the person and the environment. Raghavacharyulu (1983) also had defined entrepreneurial behaviour in the same way. i.e, Entrepreneurial behaviour is the degree to which a person strives to maximise his profits by making creative and innovative response to the environment.

Singh (1985) quoted the sociologist's view that entrepreneurial behaviour is a function of social structure which can be influenced by the economic and social incentives inherent in it.

According to Bird (1989), entrepreneurial behaviour is opportunistic, value-driven, value-adding, risk-accepting, creative activity where ideas take the form of organizational birth, growth or transformation.

Porchezian (1991) defined entrepreneurial behaviour, as the degree to which a farmer strives to maximise his profits by making a creative and innovative response to the environment, through diversification of enterprises.

Nizamudeen (1996) defined entrepreneurial behaviour as set of characteristics associated with persons who possess the drive and capabilities to initiate production, takes decision, bear risks and manage the variety of inputs necessary to successfully undertake the venture.

2.3 Dimensions of entrepreneurial behaviour

An effort was made to identify the important dimensions of entrepreneurial behaviour as reported by earlier studies.

Ackoff (1970) stressed decision making and strategy factors as promoting entrepreneurship.

Javillionar and Peters (1973) listed three dimensions of entrepreneurial behaviour viz., risk taking ability, novel or energetic instrumental activity and individual responsibility.

Gaikwad (1975) observed that all the entrepreneurs were persons with initiative, drive and hard work, though majority of the entrepreneurs had no technical knowledge.

According to Tandon (1975), the entrepreneurs must possess the important qualities such as capacity to assume risk and possessing self confidence, technological knowledge, alertness to new opportunities, willingness to accept change and ability to initiate, ability to marshall resources and ability of organisation and administration.

Mathai (1978) has listed technical risks, financial risks, social risks and environmental risks as the major risks an entrepreneur has to face. An entrepreneur should be aware of these risks and should be willing to face them.

Rao and Mehta (1978) enlisted psychological factors in entrepreneurship viz., need for achievement, need for influence, social consciousness, personal efficacy and self image, goal setting tendency, locus of resources, initiative, innovativeness, tendency to take realistic risk, sense of personal responsibility, tendency to take feedback and dignity of labour.

Singh (1978) enlisted a set of significant characteristics of entrepreneurship viz., need for achievement, need for influence, high sense of efficacy, change proneness, degree of self perceived readiness, overall modernity and financial background.

Nandapurkar (1982) developed an objective instrument to measure entrepreneurial behaviour of small farmers by taking 10 components viz., innovativeness, ability to coordinate farm activities, achievement motivation, decision making ability, information seeking, assistance of management services, cosmopolitaness, knowledge of farming enterprises, risk taking ability and leadership ability.

Raghavacharyulu (1983) conceived entrepreneurial behaviour as a cumulation of seven components viz., innovation proneness, decision making, achievement motivation, assistance of management services, risk taking ability, level of aspiration and locus of control.

De (1986) opined that only three factors such as socio-economic status, innovative orientation and entrepreneurship had significantly contributed for the progressiveness of farmers.

Pantulu (1989) classified the contributing factors that tend to influence entrepreneurship into socio-demographic variables, economic variables, variables of systematic linkage, lateral characteristics and bio-characteristics of entrepreneurs.

Rajagopalan (1989) enlisted the psychological factors that contributed to entrepreneurial development as (1) need for achievement through self study, goal setting and interpersonal support, (2) keen interest in situations involving moderate risks, (3) desire for taking personal responsibility, (4) concrete measures of task performance, (5) anticipation of future possibilities, (6) organisation skills, and (7) energetic or novel instrumental activity.

Muthayya and Loganathan (1990) found that self-confidence, internal locus of control, sociability and self actualisation had some bearing on entrepreneurship.

Nagpal (1990) indicated that to keep the entrepreneurs fed with the updated technology, innovative financing methods like venture capital may be useful.

Perumal *et al.* (1990) observed economic orientation and risk orientation as important factors influencing the entrepreneurial venture of women entrepreneurs.

Joy (1991) opined that the success of entrepreneurs showed that entrepreneurship was born out of a passion for creative activity that improved the quality of life of the entrepreneur himself and of members of the society in which he operated.

Kokate and Nand (1991) studied the entrepreneurial behaviour of small and marginal potato growers. Six dimensions viz., innovativeness, decision making, risk orientation, economic motivation, attitude towards potato cultivation and knowledge were considered to measure entrepreneurial behaviour.

Porchezian (1991) enumerated the important components of entrepreneurial behaviour of small farmers viz., locus of control, assistance of management services, level of aspiration, innovation proneness, decision making, achievement motivation, and risk taking ability.

Rutten (1992) emphasised that the entrepreneurial behaviour of small scale entrepreneurs in India is characterised by the fact that they rarely make productive investments of their profits. Instead, they are said to be guided by a desire for quick profit and commercial orientation, as a result of which they involve themselves, successively and simultaneously, in a wide range of disparate commercial and industrial activities.

Muthukrishnan (1993) expressed that entrepreneurial requisites were to be achieved primarily through motivation, skills acquired, workable planning, the knowhow in the area engaged and the strength to mobilise finance needed to sustain the growth.

Singh and Krishna (1994) used an objective instrument to measure the entrepreneurial behaviour of cotton growers by taking ten components viz., innovativeness, decision making, achievement motivation, knowledge possession, information-seeking, risk taking ability, ability to coordinate, use of management services, leadership ability and cosmopolitaness.

Jayalekshmi (1996) identified important components of entrepreneurial behaviour of rural women as economic motivation, risk taking ability, decision making ability, achievement motivation, management orientation, competition orientation and self confidence.

Banerjee and Talukdar (1997) selected 13 dimensions to measure extent of entrepreneurship. The dimensions were knowledge about the enterprise, attitude towards the enterprise, reason for venturing into enterprise, market strategy, forward integration, need for achievement, need for influencing others, need for independence, risk taking calculation, problem recognition ability, managerial ability, decision making ability and position of enterprise in life.

From the above reviews, it could be noted that an entrepreneur is expected to have various entrepreneurial traits. The preceding reviews in general indicate that to measure the entrepreneurial behaviour of entrepreneurs identified important dimensions can be grouped into four traits - creativity, orientation, motivation and ability. The trait creativity includes the dimensions viz. innovation proneness and entrepreneurial knowledge. The orientation traits includes risk orientation and management orientation. Motivation includes the dimensions viz. achievement motivation, economic motivation and level of aspiration. The dimensions viz. decision making ability, leadership ability and personal efficacy are included in the ability trait.

An attempt was made to review the salience of these ten entrepreneurial dimensions in relation to the entrepreneurial behaviour as reported by various researchers in earlier studies.

| Sl.No. | Traits/Dimensions of entrepreneurship | Author and year |
|--------|---------------------------------------|---|
| 1 | Innovation-proneness | De (1986), George <i>et al.</i> (1987), Pantulu (1989), Rao and Alagendhi (1989), Raj (1990), Porchezian (1991), Bhagat (1992), Jayalekshmi (1996), Nizamudeen (1996) |

Contd.

| Sl.No. | Traits/Dimensions of entrepreneurship | Author and year |
|--------|---------------------------------------|--|
| 2 | Decision making ability | Kokate and Nand (1991), Porchezian (1991), Ahmed and Kakoty (1993), Maraty and Reddy (1993), Singh and Krishna (1994), Nizamudeen (1996), Banerjee and Talukdar (1997) |
| 3 | Achievement motivation | Porchezian (1991), Bhagat (1992), Maraty and Reddy (1993), Sengupta and Depnath (1994), Singh and Krishna (1994), Jayalekshmi (1996), Banerjee and Talukdar (1997) |
| 4 | Risk orientation | Nadkarni (1988), Herbert and Link (1989), Perumal <i>et al.</i> (1990), Kokate and Nand (1991), Bhagat (1992) |
| 5 | Economic motivation | Perumal <i>et al.</i> (1990), Kokate and Nand (1991), Jayalekshmi (1996) |
| 6 | Entrepreneurial knowledge | Sethy <i>et al.</i> (1984), Meng (1990), Kokate and Nand (1991), Maraty and Reddy (1993), Singh and Krishna (1994), Banerjee and Talukdar (1997) |
| 7 | Management orientation | Rajagopalan (1989), Akbar (1990), Jayalekshmi (1996) |
| 8 | Personal efficacy | Sethy (1982), Anuradha (1983), Sethy <i>et al.</i> (1984), Bhagat (1992) |
| 9 | Level of aspiration | Raghavacharyulu (1983), Porchezian (1991), Jain and Varshney (1993), Nizamudeen (1996) |
| 10 | Leadership ability | Nandapurkar (1982), Singh and Krishna (1994) |

2.4 Behavioural and situational factors influencing entrepreneurial behaviour

2.4.1 Age

Age is directly related to the entrepreneur's exposure and experience in his enterprise which helps him in taking efficient decisions and execution.

Nandapurkar (1982) reported that there was no significant difference in the entrepreneurial behaviour of participant small farmers belonging to different age groups.

Raghavacharyulu (1983) found that nearly three fourths of the entrepreneurs belonged to adult category and also reported that age had positive and significant relationship with the entrepreneurial behaviour of small farmers.

Singh (1985) found that age distribution of entrepreneurs was so even that it hardly offered any significant trend in entrepreneurship formation.

Influence of age on entrepreneurial behaviour was reported by Singh and Gupta (1985), Singh *et al.* (1986), Naik *et al.* (1990) and Singh (1992).

Porchezian (1991) found that age was positively and significantly related with the entrepreneurial behaviour of farmers.

Taori (1995) observed that majority of the entrepreneur respondents were in the age group of 25 to 40.

Jayalekshmi (1996) reported that age was not significantly related with the entrepreneurial behaviour of rural women.

A positive relationship between age and entrepreneurial behaviour of agri-business operators was anticipated in the present study.

2.4.2 Age at entry

The age at which an entrepreneur enters into an enterprise activity is very important because it plays a significant role in the development of innovative spirit, foresight, determination to succeed, positive thinking and ability to take risks by an entrepreneur.

Bird (1989) stated that entry into entrepreneurial roles can occur relatively slowly or quickly, with vague or clear boundaries between previous work and entrepreneurial work.

Anna (1990) characterised the profile of 102 women entrepreneurs in Kerala and found that 49 per cent of them started their units between 26 and 35 years of age.

Ramamurthy *et al.* (1990) studied the influence of age on entrepreneurial behaviour and observed that best age for entry into such innovative establishments was between 20-40 years.

Awasthi (1992) observed that 88 per cent of the high growth entrepreneurs started their units before they attained the age of 30.

Govindappa and Halasagi (1996) reported that 55 per cent of the respondents were below 35 years of age when they entered agro-processing industry. They also reported that entrepreneurs with relatively higher level of education had entered into entrepreneurship at an early date.

In this study, a positive relationship between age at entry and entrepreneurial behaviour is postulated.

2.4.3 Education

Formal education equips an entrepreneur to develop mental power and characters which help him to deal with a number of officials and other functionaries.

Murthy (1983) concluded that education is complementary and not compulsory for entrepreneurship.

Education has been reported as a crucial factor for developing modern entrepreneurship and it accelerated the entrepreneurial spirit (Shah, 1985; Singh and Gupta, 1985; Singh, 1992).

Sharma (1985) found that there was a positive relationship existing between the education level and performance of the entrepreneurs.

Singh (1985) in an intensive empirical study of entrepreneurship formation reported that the level of educational background played a significant role in entrepreneurship formation.

De (1986) found positive and significant association of entrepreneurial characteristics of farmers with their educational level.

Deivasenapathy (1986) reported that educational level of the entrepreneurs did not influence their career success.

George *et al.* (1987) indicated that entrepreneur's level of education had positive relationship with their risk-bearing capacity.

Nadkarni (1988) observed no firm relationship between the level of education and the degree of success in business.

Khanka (1989) found that willingness to opt for the entrepreneurial career increases with more educational qualifications.

Murthy (1989) reported that in most cases of entrepreneurs the low level of education had not deterred them from taking to entrepreneurship.

Kokate and Nand (1991) revealed that self education had a positive and significant relationship with entrepreneurial behaviour of small and marginal growers of potato.

Porchezian (1991) found that educational status was not related with the entrepreneurial behaviour of farmers.

Singh (1992) concluded that education and entrepreneurial knowledge were significantly associated with entrepreneurial performance.

Sarmah and Singh (1994) in their study on determinants of entrepreneurship in agriculture found that education was significantly related with the adoption of improved agricultural practices.

Zahir (1994) found that new generation of entrepreneurs possess better educational qualification and considers it as an important factor for the success of any business venture in changing environment.

Jayalekshmi (1996) stated that educational status had positive and significant relationship with the entrepreneurial behaviour of rural women.

In the present study also, a positive relationship between education and entrepreneurial behaviour of agri-business operators is expected.

2.4.4 Family background

Family serves as the foremost training ground having better access to the facilities needed for the entrepreneurship and also families serve as a complete network of business relations among their kin and caste members. Hereditary influence also plays an important role in relation to family background as the making of an entrepreneur.

Majority of the entrepreneurs were found emerging from nuclear families (Shah, 1985; Takshak, 1990; Singh, 1992). Entrepreneurs from joint families were reported by Singh and Gupta (1985) and Vidyulata (1990).

Chacko (1990) observed that occupational choice of sons is more influenced by their fathers.

Ramamurthy *et al.* (1990) revealed that educational level of entrepreneurs, family background and age group affect the performance of the entrepreneurs and capacity utilisation.

Awasthi (1992) found no relationship between entrepreneurial performance and family type. He also reported that a positive relationship was found between the family occupation and growth performance.

Sabbarwal (1994) in a study on determinants of entrepreneurial start ups found that more than one fourth of Indian entrepreneurs have emerged from families of salaried employees, civil servants and professionals which indicate that the

favourable economic scenario is beginning slowly but enduringly influence occupational choices in India.

Zahir (1994) found that the entrepreneurs with business family background were successful in their ventures.

According to Kumar (1995), the occupational background of the entrepreneur's parents revealed that majority of the entrepreneurs hail from agricultural families.

Govindappa and Halasagi (1996) viewed that majority of the entrepreneurs were from business background and joint families while starting the agro-processing industries.

Banerjee and Talukdar (1997) observed that joint family system had a positive influence on the extent of entrepreneurship.

The preceding reviews indicate that the type of family and family occupation have a bearing on the entrepreneur's behaviour. Hence, it is postulated in the present study that family background of agri-business operators may have positive influence on their entrepreneurial behaviour.

2.4.5 Occupational status

Raghavacharyulu (1983) revealed a positive and significant relationship between the entrepreneurial behaviour of farmers and their occupation.

Rao *et al.* (1989) concluded that non-farm occupations provided year round employment and significant income to small and marginal farmers.

Jayalekshmi (1996) observed that occupation had non-significant relationship with the entrepreneurial behaviour.

The above reviews show that the relationship between occupational status and entrepreneurial behaviour is not consistent. However, it is presumed in the present study that the occupational status is likely to be positively related to entrepreneurial behaviour of agri-business operators.

2.4.6 Monthly income

Nandapurkar (1982) reported that income of farmers was positively and significantly related with their entrepreneurial behaviour.

Sethy (1982) indicated that farm income contributed to acquisition of knowledge of improved rice technology by the farm entrepreneurs.

Raghavacharyulu (1983) revealed that small farmers with high income had high entrepreneurial behaviour.

While studying the entrepreneurship in industry, Rao (1986) found that educational and income levels were important factors in motivating entrepreneurship.

George *et al.* (1987) suggested that off-farm income, a correlate of entrepreneurship called for a collaboration effort to be made by the extension agency with credit institution.

Kokate and Nand (1991) viewed that income had a positive and significant relationship with entrepreneurial behaviour of small and marginal potato growers.

Porchezian (1991) found that income of farmer and entrepreneurial behaviour were positively correlated.

Banerjee and Talukdar (1997) reported that family income and extent of entrepreneurship were related.

In the present study, a positive relationship between monthly income of agri-business operators and their entrepreneurial behaviour is anticipated.

2.4.7 Economic status

Mishra and Sinha (1980) observed that material possession was significantly correlated with the extent of adoption of wheat technology by farm entrepreneurs.

De (1986) found positive and significant association of entrepreneurial characteristics of farmers with their socio-economic status.

Murthy (1989) reported that a rapid and balanced economic growth is possible only through entrepreneurial skill.

Wheeler and Ortmann (1990) suggested that determining factors relating to success of household enterprise were human capital endowments and economic status of the household.

Sadangi and Singh (1993) reported that the economic variables namely type of house, material possession, annual income from non-crop source and employment level were significantly associated with occupational diversification.

Studies indicated above clearly outline the positive relationship between economic status and entrepreneurial behaviour. In the present study, a positive relationship between economic status and entrepreneurial behaviour of agri-business operators was expected.

2.4.8 Scientific orientation

According to Gowda (1978), the relation between the level of scientific farming and the entrepreneurial behavioural characteristics of farmers was positive and significant.

Porchezian (1991) stated that scientific orientation established a positive and highly significant relationship with the entrepreneurial behaviour.

In the present study, a positive relationship between scientific orientation and entrepreneurial behaviour is hypothesized.

2.4.9 Deferred gratification

Porchezian (1991) indicated that deferred gratification was not significantly related with the entrepreneurial behaviour of farmers.

Betru (1997) observed that farmers were not satisfied with immediate benefits. He also found a positive correlation between postponement of immediate satisfaction and use of credit by the small farmers.

In this study, a positive relationship between deferred gratification and entrepreneurial behaviour is anticipated.

2.4.10 Vocational diversification

Rutten (1986) found that medium-large farmers were characterised by an entrepreneurial approach to farming, a diversification of economic activities and new style of perception about leisure and consumption.

Chandramouleeswaran (1987) reported that technological diversification was observed in the eleven combinations among the selected small farmers. Only six per cent had grown crops alone and majority (52 per cent) had gone for dairying in addition to crops. The minimum average income was only Rs.10,550/- (crops alone) whereas the maximum was Rs.65,643/- (crops + dairy + floriculture). Triple technological mix in various combinations was followed by 36 per cent of respondents, while only 2 per cent had gone for four combinations.

Jitely (1988) observed that diversification of agriculture was the best remedy for steady trend of agricultural production.

A positive and significant relationship was observed between the entrepreneurial behaviour and vocational diversification (Porchezian, 1991).

Sadangi (1991) suggested that farm youth who are fully employed in farming, due to possession of more farm power and more area under cash crops can very well diversify in the areas of agro-industry, dairy, poultry, sheep and goat rearing to supplement their income. He also concluded that diversifiers preferred more calculated risk than the non- diversifiers.

Zahir (1994) found that almost three-fourths of the entrepreneurs were manufacturing more than two products and 63 per cent had diversified after initial production operations with one or two products, which shows their dynamic and enterprising approach to product planning.

It could be inferred from the above review that vocational diversification of enterprise is important for any entrepreneur. Since vocational diversification helps entrepreneurs to undertake any risks, in relation to his entrepreneurial activities as compared to those who do not have any other occupation, it is quite reasonable to postulate a positive relationship between vocational diversification and entrepreneurial behaviour of agri-business operators.

2.4.11 Self confidence

Loganathan (1988), Sharma (1988), Birley (1989) and Naik *et al.* (1990) observed that confidence of the entrepreneur had significant association with entrepreneurial development and performance.

Muthayya and Loganathan (1990) reported that self-confidence, internal locus of control and self-actualisation were high among the entrepreneurs.

Singh (1992) found most of the entrepreneurs possessing high level of self-confidence.

The above studies show that self confidence of entrepreneurs is closely related with the entrepreneurial development. A positive relation between self confidence and entrepreneurial behaviour of the agri-business operators is anticipated in the present study.

2.4.12 Self concept

McAuley (1976) defined self concept as the conglomerate of perceptions one has about oneself, it may contain in correct pictures, and its development is continual.

Robbins and Jones (1976) explained self concept as those physical and social perceptions of ourselves that we have acquired through our interaction with others and that have been validated by our experiences.

De (1986) stated that entrepreneurship is a package of personality characteristics of entrepreneurs.

Though the above studies do not bring out relationship between self concept and entrepreneurial behaviour, a positive and significant relationship between self concept and entrepreneurial behaviour of agri-business operators is postulated in this study.

2.4.13 Closeness with support system

Development of enterprise and entrepreneurial behaviour rely much on the extent to which the entrepreneur makes contact with development personnel of various agencies and organisations related to his agri-business enterprise. Closeness with support system helps the agri-business operators to gain knowledge on latest technology related to their enterprise and obtain personal assistance, venture capital etc. during the various stages of enterprise development.

Basu and Moulik (1979) stated that support system for developing entrepreneurial capabilities assume considerable importance.

According to Nandapurkar (1982) and Raghavacharyulu (1983), contact with support system was positively and significantly related to the entrepreneurial behaviour.

Singh (1985) observed that the entrepreneurs had wider organisational exposure during the formation of an enterprise.

Akhouri and Mishra (1990) reported that support systems help the entrepreneurs in all their activities to run their enterprise successfully.

Jyotibha (1990) observed a positive association between emergence and success of entrepreneurship and support system.

Anantharaman (1991) viewed that closeness with agricultural support system was significantly contributing to managerial efficiency of the farmers.

In the present study also, a positive relationship between closeness with support system and entrepreneurial behaviour is hypothesized.

2.4.14 Orientation towards competition

It refers to the orientation of individuals to place oneself in a competitive situation in relation to others for projecting one's excellence in respective fields. This is considered to be one of the motivating forces which lead the entrepreneurs to attain excellence in comparison to other entrepreneurs.

Rao and Mehta (1978) enlisted competition and collaboration as one of the factors that influence entrepreneurship.

Badachickar (1985) stated that competition orientation of farmers had a positive relationship with management orientation.

Gregg (1985) and Naik *et al.* (1990) reported that the entrepreneurial trait, 'Competition' had significant association with the entrepreneurial development and performance.

Singh (1992) inferred that majority of the entrepreneurs possessed medium level of competition spirit.

In the present study a positive relationship between orientation towards competition and entrepreneurial behaviour of agri-business operators is hypothesized.

2.4.15 Credit orientation

Credit institutions play a crucial role in making available the required capital, essential for establishment and running the enterprise.

Mishra and Sinha (1980) reported that credit orientation was significantly correlated with the technology adopted by the farm entrepreneurs.

Porchezian (1991) found that farmers who had high degree of credit orientation had high entrepreneurial behaviour.

Singh (1992) reported that majority of the entrepreneurs possessed low degree of credit orientation. This result was supported by the findings of Shah (1985), Akhouri (1990) and Jyotibha (1990).

Based on the above results, positive relationship between credit orientation and entrepreneurial behaviour of agri-business operators is postulated in this study.

2.4.16 Rational orientation

Mannheim (1960) suggested that acts of thought may be classified as substantially rational if they reveal intelligent insight into the inter-relation of events in a given situation.

Hobbs (1964) measured rationality on the basis of economic productivity of the entrepreneurs.

Supe (1969) inferred that the act of an individual is considered rational to the extent to which he justifies his selection of most efficient means, from among the available alternatives, on the basis of scientific criteria for achieving maximum economic ends.

Rajendran (1992) observed that rational orientation did not establish significant relationship with the utilisation of the agricultural enterprises.

In the present study a positive relation between rational orientation of agri-business operators and their entrepreneurial behaviour is hypothesized.

2.4.17 Training experience

With the changing concept that entrepreneurs are not born but created by situation, 'training' has assumed a significant importance in entrepreneurial development.

Rao (1983) studied the problems of technically trained entrepreneurs and reported that they showed a higher level of entrepreneurship than the entrepreneurs with no such trainings.

Training on entrepreneurial development programmes help a person to become aware of such qualities present in him and develop them constructively (Harper, 1984; Shah, 1985; Sharma, 1988; Rao and Alagendhi, 1989; Jyotibha, 1990).

Akhouri (1985) described that first generation of entrepreneurs required training on entrepreneurial quality, capability of enterprise launching, ability for enterprise management, social responsibility and entrepreneurial discipline.

Studies by Rao (1986) and Loganathan (1988) revealed that there were inadequate training facilities for entrepreneurs specially in the rural areas and some of them were not relevant to the need of the clientele.

Natarajan and Thenmozhy (1991) concluded that women possessed entrepreneurial skill to start enterprises and well planned and properly conducted Entrepreneurial Development Programmes (EDP) would help women to emerge as successful entrepreneurs.

Singh (1992) observed that most of the entrepreneurs (67.00 per cent) did not avail the opportunity of getting any kind of entrepreneurial training. He further observed that training showed no significant impact on entrepreneurial performance which otherwise was quite prominent. The same was reported by Vitz (1987) and Takshak (1990).

Perumal and Vijayaraghavan (1994) suggested that an important role of extension will be to identify and develop commodity-oriented entrepreneurship quality at village level. The extension functionaries need special skill in imparting training in this area. The training should be organised at different levels in relation

to policy related matters, programme project matters, implementation matters and also at the operational level for sustained entrepreneurial development.

Susamma (1994) observed that the necessary entrepreneurship and management skills were to be inculcated among the sericulturists, as it was an income generating activity for rural youth and women. For this the skill in planning and analysing the productivity, cost of cultivation, cost benefit comparison, possibilities of business expansion etc. should be developed among the Sericulture trainees.

While studying the entrepreneurship in small scale subsistence and commercial agriculture, Fraser and Antrobus (1995) indicated that the provision of training programme, marketing facilities, government sponsored irrigation projects and the farmer support programme were the necessary ingredients for successful entrepreneurship.

Since training helps a person to utilise the potential entrepreneurial qualities present in him and to further develop them constructively in establishing new business, developing man power requirement and creating more and new job opportunities for others, it is quite reasonable to postulate a relationship between training experience and entrepreneurial behaviour of agri-business operators.

2.4.18 Self-reliance

Rao and Mehta (1978) enlisted need for independence as one of the psychological factors that influence entrepreneurship.

Prasad (1983) had reported a high and significant relationship between self-reliance and achievement motivation in case of rice farmers.

Significant relationship of self-reliance of farmers with their management orientation was reported by Sreekumar (1985).

Porchezian (1991) found that self reliance was positively and significantly related with entrepreneurial behaviour.

In the present study, it is presumed that self reliance is likely to be positively associated with entrepreneurial behaviour.

2.4.19 Media utilisation

The current mass media development has made of possible for the entrepreneurs to get timely information. Now-a-days agri-business and allied aspects do enjoy considerable coverage in mass media which may ultimately influence the entrepreneurial behaviour of agri-business operators.

Nandapurkar (1982) inferred that a positive and significant relationship was observed between media participation and entrepreneurial behaviour of farmers.

Raghavacharyulu (1983) reported that mass media contact influences the entrepreneurial behaviour of small farmers.

Tyagi and Sohal (1984) pointed out that media exposure was negatively, but non-significantly related with the adoption of dairy enterprise.

Singh (1985) observed that the entrepreneurs were well exposed to mass-media communication to get awareness and to adopt the new devices of agricultural development.

According to Kokate and Nand (1991) use of communication sources had positive and significant relationship with entrepreneurial behaviour.

Porchezian (1991) reported that mass media contact was non significantly related with the entrepreneurial behaviour of farmers.

Jayalekshmi (1996) found positive and significant relationship between mass media contact and entrepreneurial behaviour of rural women.

In the present study a positive relationship is anticipated between mass media utilisation and entrepreneurial behaviour of agri-business operators.

2.5 Concept of agri-business, agri-business operator and agri-business performance

2.5.1 Agri-business

According to Goldberg (1968), an agri-business commodity system encompasses all the participants involved in the production, processing, and marketing of a single farm product. Such a system includes farm suppliers, farmers, storage operators, processors, wholesalers and retailers involved in a commodity flow from initial inputs to the final consumer.

Drilon (1971) indicated that agri-business as an approach is a very useful tool for linking the agricultural sector with the industrial sector.

Scoville (1973) proposed the principal components of agri-business as (a) Production, distribution and application of inputs of non-farm origin, and the non-farm portion of feed and seed inputs. (b) Credit services to farmers. (c) Marketing

and processing of farm products. (d) Off-farm storage, (e) Transportation of farm products. (f) Advisory, grading and regulatory services.

Downey and Erickson (1987) defined agri-business as one which includes all those business and management activities performed by firms that provide inputs to the farm sector, produce farm products and/or process, transport, finance, handle or market farm products.

Rajagopal (1990) explained that the study of agri-business usually entails description of the cropping pattern and production along with other socio-economic aspects such as the overall economic structure, geographical distribution of markets and marketable surplus, entry, barriers in the open market for better price of the produce, traders' concentration, potential crops, competitive price structure, market segments, state interventions, market education at farmer's level and future trend.

Agri-business, encompasses a broad range of economic activities including all farm production, agricultural input supply and agro-processing (APO, 1992).

According to Kasryno (1992) agri-business encompasses production, processing farm inputs and machinery industry and the supporting services such as trade transportation, farm input distribution and banking.

Seetharaman and Shingi (1992) viewed that agri-business is relatively a broader concept than agriculture which popularly refers to farming as an occupation.

According to Govindappa and Halasagi (1996) agri-business includes the processing of food and fibre products, agricultural marketing services and agricultural inputs.

In the present study agri-business encompasses production of farm produce, undertaking farm related business ventures and processing of raw materials into value added products in a commercial perspective.

2.5.2 Agri-business operator

According to Pareek and Nadkarni (1978), entrepreneurship should not be mistaken for only adoption of a new idea or a new practice. A farmer by merely adopting a new variety of wheat or a new pesticide does not become an operator of farm business. What is significant here is the change in the identity of the person from a farmer to that of a farm business operator.

LaDue *et al.* (1991) reported that gross income and operator age were consistently significant indicators of the farmer's investment decisions. These results were consistent with the life cycle of farm operators and economics of size.

In this study, the term agri-business operator refers to a person who takes initiative for the establishment, management and development of an agriculture related enterprise.

2.5.3 Agri-business performance

There were few direct studies on the concept of agri-business performance. Hence, review on the studies on entrepreneurial performance are presented which indirectly serve the purpose.

Sharma (1975) examined entrepreneurial performance through 'role' frame of analysis. The role - the behaviour and value pattern of entrepreneurs in a manufacturing unit as prescribed by the society was treated as the criteria for evaluation of entrepreneurial performance.

According to Basu and Moulik (1979), the indices of entrepreneurial performance were growth in fixed capital, average gross turnover and index of diversification.

Sharma (1980) evaluated the performance of promoters of manufacturing companies using gross block and networth as measures of corporate growth.

According Bruno and Tyejee (1982), the higher entrepreneurial performances depends on venture capital availability, presence of experienced entrepreneurs, a technically skilled labour force, favourable government polices, proximity of universities, availability of land or facilities, accessibility to transportation, receptive population, availability of supporting services and attracting living conditions.

Sharma (1985) defined entrepreneurial performance as a function of socio-cultural background of the entrepreneur, his motivations, ability, financial strength and the environment.

Bhatnagar (1989) defined entrepreneurial performance as a function of ability and motivation.

Khanka (1989) measured the entrepreneurial performance by using the indicators viz., promotion of units, production performance and sales performance.

Rao and Alagendhi (1989) measured the entrepreneurial performance by the profit rate growth in terms of value addition and labour productivity.

Awasthi (1992) used indicators viz., capacity utilisation, capital productivity and labour productivity to assess the growth performance of firms.

Singh (1992) observed positive significant association between entrepreneurial profit and entrepreneurial performance.

Singh (1992) defined entrepreneurial performance as a function of entrepreneurial ability which was largely governed by the extent of motivation and perceived profitability of entrepreneurs.

Kumar (1995) measured the entrepreneurial progress in terms of the performance and the growth of enterprise, which covered the different aspects like sales turnover, capital employed, size of employment, capacity utilisation production, profits, time lag for earning profits and future plans.

From the studies reviewed, it is understood that performance of an enterprise could be measured in terms of capacity utilisation, benefit-cost analysis, hired labour, perceived profitability, index of diversification, contribution to society and labour relationship.

Hence, these indicators were considered to measure the agri-business performance of the respondents, in the present study.

2.6 Constraints influencing entrepreneurial behaviour

Pandya and Trivedi (1988) defined constraints as those items of difficulties or problems faced by individuals in adoption of technology. Zinyama (1988) referred any problem or limitation as constraint.

Manpower support in the form of numbers is hardly a problem but their quality and qualification most of the time pose the problem of inadequate manpower support to the entrepreneurs (Harper, 1984).

Sharma (1985) concluded that rise in cost of production, low demand, power cut, shortage of raw materials and labour unrest were the major problems faced by the entrepreneurs.

Hassim *et al.* (1986) identified the problems of small entrepreneurs in food processing sector as: poor and inconsistent quality of finished products, insufficient expertise, inefficient marketing and distribution, inadequate research and development activities.

Non-availability of raw material was a constraint to the entrepreneurs specially at the initial stages (Vitz, 1987).

Nadkarni (1988) reported two major problems of women entrepreneurs as stiff competition and high price of raw material. The technical problems were power cut and shortage of raw materials. The financial problems were late payment of bills, shortage of working capital and recovery of dues.

Khanka (1989) identified the problems of small scale entrepreneurs as shortage of raw material, competition by large units and paucity of liquid resources.

The importance of resources viz., raw material, finance, marketing, technical guidance etc., always serve as the prerequisite requirements for achieving the desired goals in any enterprise as emphasized by Sharma (1990) and Naik *et al.* (1990).

Lack of finance had been found causing hurdles at almost every stage of an enterprise. Similarly, inadequate marketing facilities were one of the main difficulties faced by the entrepreneurs (Takshak, 1990; Vidyulata, 1990).

Asian Productivity Organisation (1992) concluded that agri-business is confronted with problems such as inconsistency of supply and quality of raw materials, lack of modern infrastructure and equipment for food processing, shortage of appropriate skilled labour and technical know-how, lack of management skills, inadequate attention given to the quality of food products and lack of information on consumer needs.

Prantilla (1992) reported that irregularity in the supply of raw materials, inadequate infrastructure and transport facilities, lack of post harvest facilities, low quality of products, inadequate financing and credit were the major problems in agri-business sector.

Singh (1992) identified that the major constraints faced by the entrepreneurs were short and untimely supply of raw materials, unanticipated price rise of inputs, limited working capital, constant need of finance, and competition with already established enterprises.

Srivastava (1994) inferred that women entrepreneurs were facing problems of shortage of raw material, power, finance and marketing of the produce. Besides maze of laws and cumbersome procedures act as a dampening force to the entrepreneur's zeal and zest of expand their business.

Kumar (1995) identified the major problems faced by small scale units and reported that first and major problem was marketing followed by finance and raw materials. Other acute problems were labour, infrastructure and lack of technical and managerial guidance.

Govindappa and Halasagi (1996) had reported scarcity of raw material and power supply as two major problems of entrepreneurs.

Venkataramaiah and Manjula (1996) identified the problems faced by women entrepreneurs as insufficient amount of loans, delay in payment from the bank, lack of local demand and marketing facilities, lack of availability of inputs and proper transport facilities.

From the above review, it is clear that entrepreneurs had various constraints in their enterprises and which had affected their entrepreneurial traits and also their enterprise performance.

In this study also the constraints felt by respondents in their enterprises were proposed to be studied.

2.7 Conceptual model of the study

Based on the literature review presented, a conceptual model developed for the study is presented in Fig.1.

The model provides an abstract view of the behavioural characteristics of agri-business operators which are expected to be related with their entrepreneurial behaviour.

The entrepreneurial behaviour in the present study is considered as the sum of different entrepreneurial traits/dimensions which an individual possess.

It is expected that there could be many constraints which an agri-business operator has to overcome so as to efficiently manage his agri-business performance.

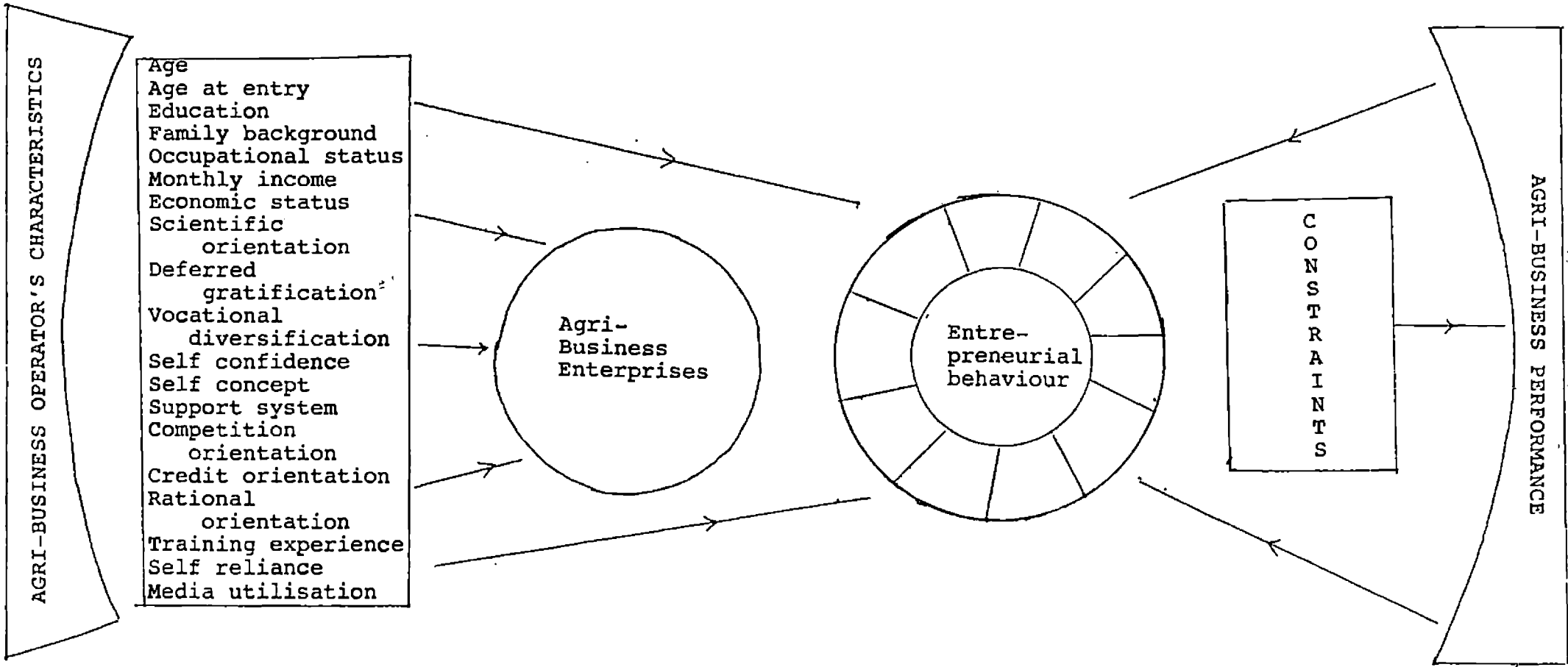


Fig.1 Conceptual frame work of the study

Methodology

3. METHODOLOGY

In this chapter, the methods and procedures employed in the study for data collection, data analysis and interpretation of results are presented under the following heads:

- 3.1 Locale of the study
- 3.2 Selection of the respondents
- 3.3 Selection, operationalisation and measurement of dependent and criterion variables
- 3.4 Selection, operationalisation and measurement of independent variables
- 3.5 Constraints experienced by agri-business operators
- 3.6 Procedure employed in data collection
- 3.7 Statistical tools used in the study
- 3.8 Hypotheses of the study

3.1 Locale of the study

3.1.1 Selection of the study area and brief description

Kerala is divided into five agro-climatic zones viz., Southern zone, Central zone, Northern zone, High Ranges zone and the Special zone of Problem Areas (KAU, 1989).

The Central zone was purposively selected as the study area since the major crops of Kerala - rice, coconut, banana and rubber are the main crops of the zone. The zone consists of Palakkad, Thrissur and Ernakulam districts. There are five Taluks, 12 Development blocks and 89 Panchayats in Palakkad district. The Thrissur district consists of five Taluks, 18 Development blocks and 99 Panchayats while the Ernakulam district consists of seven Taluks, 13 Development blocks and

MAP OF KERALA

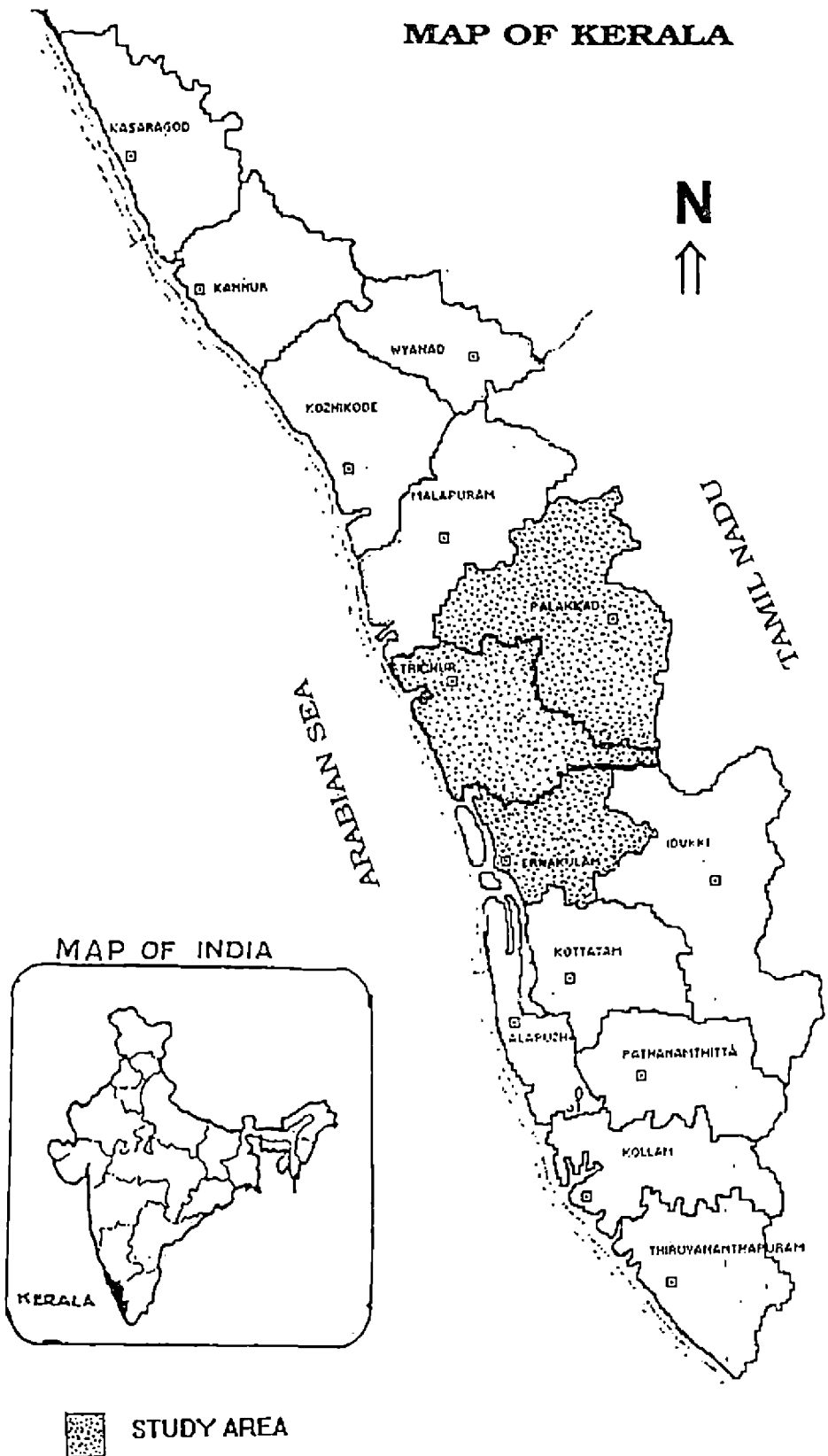


FIG. 2. LOCATION OF CENTRAL ZONE

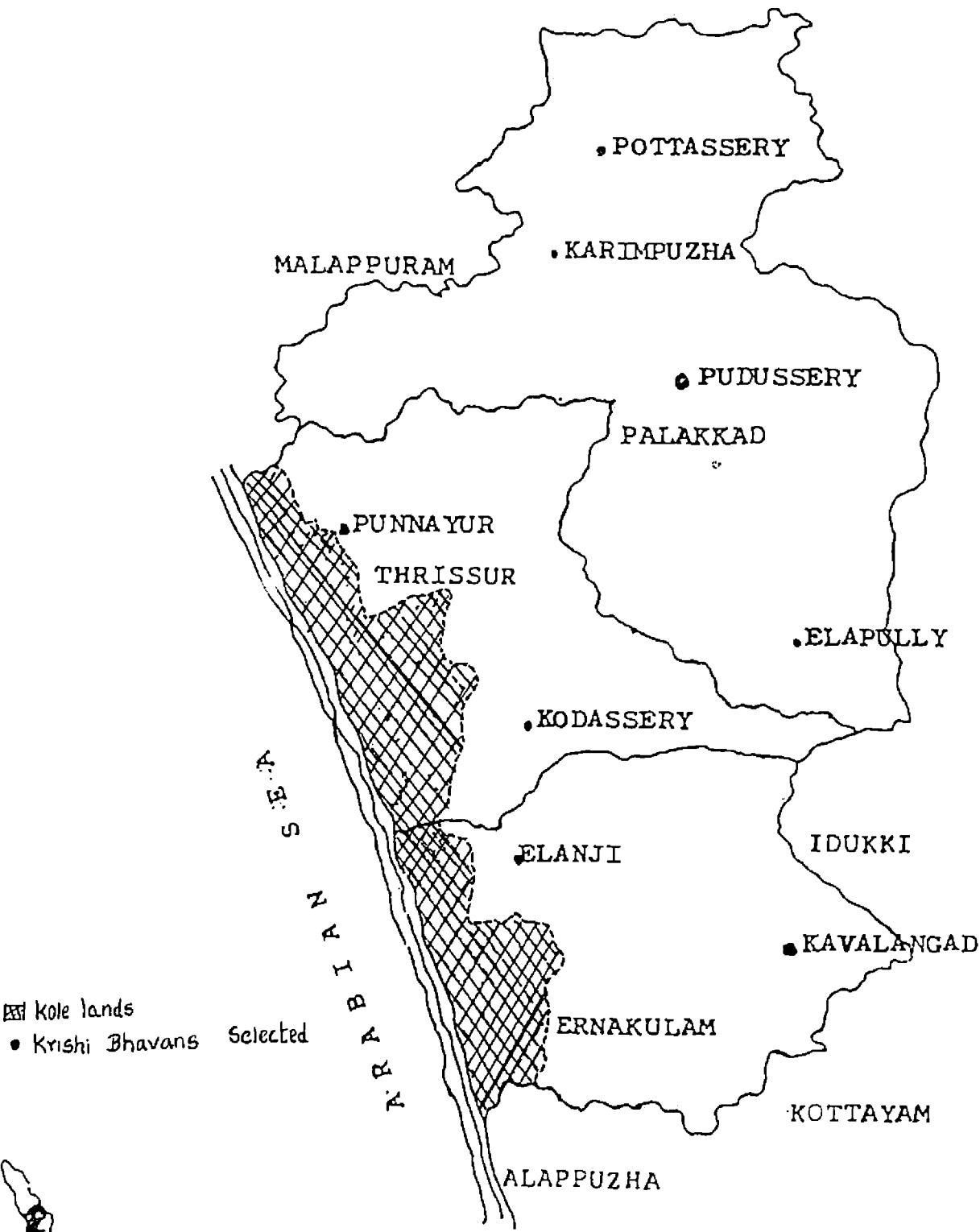


FIG.3. MAP SHOWING -- LOCALE OF THE STUDY

84 Panchayats. The zone is characterized by comparatively higher rainfall during the South-West monsoon and less rainfall during the North-East monsoon period, leaving in between a dryspell of six months from December to May. The mean maximum and minimum temperature of the zone are 31.4°C and 21.1°C, respectively. The soil type is mainly laterite. Rainfed cultivation is mainly prevalent in this region. The major crops of the region are rice, coconut, banana and rubber (Fig.2).

3.1.2 Respondent categories and their operational definitions

In the study, the respondents viz., agri-business operators are defined as those who either cultivate any crop or undertake any on-farm or off-farm business activities related with agriculture or agricultural produces with commercial perspectives and motives. Based on this, the respondents were classified into three groups as:

1) Commercial farmer

A commercial farmer is one who cultivates a crop with the main orientation and intention of preparing the produce for sale in the market for better returns.

2) On-farm agri-business operator

On-farm agri-business operator is an individual entrepreneur who undertakes farm related business activities/ventures such as nursery units, poultry units, mushroom production units etc. in a commercial perspective.

3) Off-farm agri-business operator

Off-farm agri-business operator is an individual entrepreneur who runs units using agricultural produces as raw materials to be processed into value

added products which are marketed as such or are tenable for further processing (Eg. oil mills, food processing units etc.).

3.1.3 Identification of study location

The study locations for the three groups of respondents were identified separately through a multiphased procedure.

The commercial farmers were identified as described below:

It was decided to confine the study in relation to selected four crops, viz., rice, banana, coconut and rubber. These crops were selected considering the acreage and also the scope for diversification. One of the three districts with the highest area under the selected crops in the identified agro-climatic zone was first selected. The districts selected accordingly were:

| <u>Sl.No.</u> | <u>Crop</u> | <u>Selected district</u> |
|---------------|-------------|--------------------------|
| 1 | Rice | Palakkad |
| 2 | Banana | Palakkad |
| 3 | Coconut | Thrissur |
| 4 | Rubber | Ernakulam |

From each of the selected district, the Blocks in first and second positions with respect to cropping area under the selected crop were selected. Accordingly, Coyalmannam and Kollengode Blocks of Palakkad district, Mannarkad and Sreekrishnapuram Blocks of Palakkad district, Chalakudy and Chavakkad Blocks of Thrissur district and Kothamangalam and Pampakuda Blocks of Ernakulam district were selected for rice, banana, coconut and rubber, respectively.

From each of these selected Blocks, one panchayat each with the highest area under the selected crop was selected. Accordingly, Pudussery panchayat of Coyalmannam Block and Elapully panchayat of Kollengode Block were the panchayats selected for rice. The Pottassery panchayat of Mannarkad Block and the Karimpuzha panchayat of Sreekrishnapuram Block were selected for banana. The panchayats selected for coconut were Kodassery from Chalakudy Block and Punnayur from Chavakkad Block. The panahcyats of Kavalangad and Elanji were selected for rubber, from Kothamangalam and Pampakuda Blocks (Fig.3).

Thrissur district was purposively selected as the study location for the selection of on-farm and off- farm entrepreneurs due to the following reasons.

- a) Thrissur district has high number of well established agri-business units compared to the other two districts (558).
- b) Familiarity, nearness and convenience of the researcher to the study area.

A list of on-farm and off-farm agri-business enterprises in Thrissur district was prepared through reconnaissance survey and discussion with officials of the various development departments involved in agri-business promotion activities and services. From the prepared list, two major on-farm and off-farm agri-business enterprises were identified. Thus, poultry and nursery were identified as on-farm enterprises, while food processing and oilmill were identified as off-farm enterprises.

3.2 Selection of the respondents

a) Commercial farmers

One of the objectives of the study was to analyse the entrepreneurial behaviour and agri-business performance of the commercial growers of rice,

banana, coconut and rubber. The following criteria were used to define the population of such respondents for the study.

- a) The respondents in this category must be raising at least one of the crops viz., rice, banana, coconut or rubber.
- b) They should have cultivated rice and banana for atleast three consecutive years and coconut and rubber for at atleast ten consecutive years at the time of data collection.
- c) They should have cultivated these crops with the main intention of marketing the produce and are able to market atleast three-fourth of the total production of the produce to the market.

Keeping these three criteria in view, a list of commercial farmers in each selected panchayat was prepared in consultation with field level extension personnel. Fifteen farmers were selected from each panchayat randomly. Thus a total sample of 120 commercial farmers were selected for the study in such a way that 30 were from each selected crop (Table 1).

b) On-farm agri-business operators .

The lists of poultry and nursery units in Thrissur district with atleast three years of operational experience were prepared. From the prepared lists, thirty units each of poultry and nursery were selected at random. The owner operators of these units formed the on-farm respondents. Thus a total sample of sixty on-farm agri-business operators were selected (Table 1).

c) Off-farm agri-business operators

The lists of food processing units and oilmills in Thrissur district with atleast three years of operational experience were prepared and thirty units each of

Table 1: Selected area, enterprise and samples of respondents for the study

| Sl. No | Category | Enterprise selected | District selected | Block selected | Panchayat selected | Number of respondents selected |
|--------|----------------------------------|---------------------|-------------------|---------------------|--------------------|--------------------------------|
| 1 | Commercial farmers | Rice | Palakkad | 1. Coyalmannam | Pudussery | 15 |
| | | | | 2. Kollengode | Elapully | 15 |
| | | Banana | Palakkad | 1. Mannarkkad | Pottassery | 15 |
| | | | | 2. Sreekrishnapuram | Karimpuzha | 15 |
| | | Coconut | Thrissur | 1. Chalakudy | Kodassery | 15 |
| | | | | 2. Chavakkad | Punnayur | 15 |
| | | Rubber | Ernakulam | 1. Kothamangalam | Kavalangad | 15 |
| | | | | 2. Pampakuda | Elanji | 15 |
| 2 | On-farm agri-business operators | Poultry | Thrissur | - | - | 30 |
| | | Nursery | „ | - | - | 30 |
| 3 | Off-farm agri-business operators | Food processing | „ | - | - | 30 |
| | | Oil mill | „ | - | - | 30 |
| | | | | | | ----- 240 |

food processing and oilmills were selected at random to make a total of 60 units and the owner operators of these units formed the off-farm agri-business operators for the study (Table 1).

3.3 Selection, Operationalisation and Measurement of dependent and criterion variables

3.3.1 Dependent variable

Entrepreneurial behaviour (EB) was taken as the dependent variable for the study, which was measured by developing an index called Entrepreneurial Behaviour Index (EBI).

3.3.1.1 Definition and measurement of entrepreneurial behaviour

Through review of past studies and consultation with experts in the field of agri-business, 13 dimensions related to entrepreneurial behaviour of agri-business operators were identified (Table 2).

Based on these identified dimensions, entrepreneurial behaviour was operationally defined for the study as the ability of an agri-business operator to deal with risks, take appropriate decisions, and manage resources in an optimum way towards maximising the profit of his enterprise with a definite motive so as to excel others.

The list of identified dimensions was administered to the qualified and experienced faculty members in the discipline of Agricultural Extension in the Kerala Agricultural University (KAU), Tamil Nadu Agricultural University (TNAU) and University of Agricultural Sciences (UAS) to serve as judges for rating the relevancy and exhaustiveness of the dimensions to be included.

The judges were requested to critically go through the list of dimensions and indicate the relevancy of these dimensions to measure the entrepreneurial behaviour. They were also requested to suggest any other variable which they considered relevant, and were asked to rate the variable on a five point continuum ranging from most relevant, more relevant, relevant, less relevant and least relevant with weightages of 5, 4, 3, 2 and 1, respectively. From a total of 65 judges selected for rating, responses were obtained from only 53 judges (81.5%).

In many of the previous research studies, it was observed that the dimensions/variables were selected based on mean relevancy score. In the present study, the dimensions were selected based on the following methods.

1. The dimensions with relevancy weightage score above the pooled mean relevancy weightage score (μ)
2. The dimensions with standard deviation below the pooled mean standard deviation (σ)
3. The dimensions with relevancy weightage score between $\mu - \sigma$ and $\mu + \sigma$

Out of 13 identified dimensions, ten dimensions were found to follow all the above three criteria and those were selected to measure the entrepreneurial behaviour of agri-business operators. The dimensions selected were innovation proneness, decision making ability, achievement motivation, risk orientation, level of aspiration, entrepreneurial knowledge, management orientation, leadership ability, economic motivation and personal efficacy. The variables with their relevancy weightage score and standard deviation are given in Table 2.

Table 2. Identified EB dimensions and their relevancy weightage score and standard deviation

| Sl.No. | Identified dimensions | Relevancy weightage score | Standard deviation |
|--------|--|---------------------------|--------------------|
| 1 | Innovation proneness* | 4.72 | 0.32 |
| 2 | Decision making ability* | 4.62 | 0.38 |
| 3 | Achievement motivation* | 4.68 | 0.38 |
| 4 | Risk orientation* | 4.64 | 0.35 |
| 5 | Level of aspiration* | 4.43 | 0.36 |
| 6 | Locus of control | 4.25 | 1.14 |
| 7 | Entrepreneurial knowledge* | 4.62 | 0.38 |
| 8 | Management orientation* | 4.57 | 0.44 |
| 9 | Ability to co-ordinate farm activities | 3.45 | 0.90 |
| 10 | Leadership ability* | 4.34 | 0.42 |
| 11 | Economic motivation* | 4.66 | 0.50 |
| 12 | Personal efficacy* | 4.34 | 0.42 |
| 13 | Cosmopolitaness | 3.50 | 1.10 |

*Dimensions selected for the study

3.3.1.2 Operationalisation and measurement of identified dimensions of EB

a) Innovation-proneness

Innovation-proneness refers to the behaviour pattern of an agri-business operator who shows interest in and desire to seek changes in his enterprise and his willingness to introduce such changes in his agri-business activities when found practical and feasible.

Innovation-proneness was measured by the 'self-rating scale' (Moulik, 1965). This scale consisted of three sets of statements. The respondents were asked to choose the one amongst three sets of statements which most accurately portrayed 'most like' and also the one that portrayed 'least like' from each set. The respondent's 'most like' and 'least like' choices for each statement were obtained.

The three sets in each statement were given the weightage of 3, 2 and 1 denoting high, medium and low degree of innovation-proneness.

The ratio of weightages of the most liked statements to the least liked statements in three sets was worked out, which gave the respondent's self rating score for innovation-proneness.

b) Decision making ability

Decision making ability was operationalised as the degree to which an agri-business operator justifies his selection of most efficient means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profits (Nandapurkar, 1982). This was measured using the scale developed by Nandapurkar (1982).

The scale consisted of ten items. The response categories for each item were 'not considered', 'considered after consultation with others' and 'decision taken independently' for which the scores assigned were 0, 1 and 2, respectively. By summing up the scores over the ten items, the decision making ability score for a respondent was obtained. The range of the score was from 0 to 20.

c) Achievement motivation

Achievement motivation refers to the striving of the respondents to do a work with a standard of excellence which may be task-related, self-related or other-related. It was measured with the help of the scale developed by Desai (1981) and followed by Anantharaman (1991). The scale consisted of five incomplete sentences, each having three choices for the respondents to choose from the answers felt as appropriate for them. One of the choices indicated high achievement

motivation compared with other two. The respondents who gave the proper choice were assigned a score of one and zero score for other choices. The scores obtained for the choices were summed up to get the respondent's achievement motivation score. The range of score ranged from 0 to 5.

d) Risk orientation

Risk orientation was operationalised as the degree to which the respondent is oriented towards risk and uncertainty and exhibits courage to face problems of risk.

The scale developed by Supe (1969) and followed by Susamma (1994) was used to measure the risk orientation of the respondents. The scale consisted of six statements, of which the fifth statement was negative and the rest positive. The respondents were scored on a five point continuum with scores 4, 3, 2, 1 and 0, for their responses strongly agree, agree, undecided, disagree and strongly disagree, respectively. The scores were reversed for the negative statement. The scores obtained on each statement were cumulated to obtain the total score of a respondent on this dimension so that the maximum potential score for any individual will be 24 and the minimum zero.

e) Economic motivation

Economic motivation is an indication of the degree of willingness of an individual to invest the available potential resources in adoption of improved scientific practices related to the enterprise. An entrepreneur who views himself to be economically motivated may seek more monetary gains than the others with values such as freedom from debt and self-sufficiency.

The self-rating economic motivation scale developed by Moulik (1965) was employed to measure the economic motivation of the entrepreneur in the present study. The scale consisted of three sets of statements, each set having three short statements with weights 3, 2 and 1 indicating high, medium and low degree of economic motivation. The forced choice method was followed to overcome the familiar problems of personal bias and lack of objectivity in self evaluation. This method forced the respondent to choose from a group of three short statements describing a particular personality characteristic, the one which most accurately described the respondent himself and also the one which least accurately portrayed himself.

After obtaining the respondents' 'most-least' choices for each of three sets of statements, the scoring was done by summing up the ratios of the weight of the 'most-like' statements to the weight of 'least-like' statements. The ratio ranged from 0.30 to 3.0.

f) Entrepreneurial knowledge

Entrepreneurial knowledge refers to the degree of internalisation of the facts and concepts related to agri-business enterprise by the respondent which gets reflected in his cognitive behaviour.

It was measured using a knowledge test developed for the purpose. The procedure of developing the test is briefly discussed.

1. Collection of items

The knowledge test consists of questions called items. A number of items on the aspects of behavioural competency, enterprise launching competency, and enterprise management competency related to each enterprise were collected from the training experts of entrepreneurship development programmes, available

literature, subject matter specialists and personal experience. Altogether 30 items were collected. The items were converted into objective type of questions viz., multiple choice questions, true-false questions and sentence completion tests (fill in the blanks) etc.

2. Item analysis

Item analysis was carried out to ascertain the indices of item difficulty and item discrimination.

The collected items were administered to 30 agri-business operators in a non sample area which represented the same District and Block of the main study, but not the same panchayat. Thus, the geographical and other features of the area where the knowledge test was done did not differ from the study area. The correct response was assigned a score of one each and the wrong response, a score of zero each. The total score of each individual for the 30 items were summed up and it was arranged in an ascending order.

As suggested by Anasthasi (1961) the 30 respondents were grouped into three, as high, medium and low groups representing 33.33 per cent of highest, 33.33 per cent of medium and 33.33 per cent of lowest scores respectively. The data pertaining to correct responses for all the items in respect of these three groups were tabulated and the difficulty and discrimination indices were calculated.

i) Index of item difficulty

The difficulty index of each item was calculated by averaging the percentage of correct answers in high, medium and low groups.

$$P_i = \frac{n_i}{N_i} \times 100$$

where P_i = Difficulty index expressed in percentage of i^{th} item
 n_i = Number of respondents giving correct answers to the i^{th} item by low, medium and high groups
 N_i = Total number of respondents to whom the i^{th} item was administered.

ii) Index of item discrimination

The discrimination index of each item, ie., its capacity to discriminate the well informed from the poorly informed was calculated by the formula.

$$E = \frac{S_1 - S_2}{N/3}$$

where E = Discrimination index
 S_1 and S_2 = Frequencies of correct answers in high and low group respectively
 N = Total number of respondents in the item analysis sample.

iii) Final selection of items

Those items which had a difficulty index between 20 and 80 per cent and discrimination index above 0.30 were selected for inclusion in the knowledge test. Accordingly, there were 10 items selected in the final knowledge test (vide Appendix II).

Reliability

Guilford (1954) defined reliability as the proportion of variance in the obtained test score. A scale can be considered reliable only when it consistently produces the same or similar results when applied to the same sample.

The test-retest method was used to test the reliability of the knowledge test. All the 10 items of knowledge test were administered twice to thirty non-sample farmers in Palakkad and Thrissur districts. The two sets of knowledge scores were correlated. The coefficient of correlation between the two sets of scores was 0.81 which was significant at 0.01 level indicating the high reliability of the test.

Validity

Content validity is a kind of validity by assumption as described by Guilford (1954). Care was taken to include items covering the entire universe of relevant aspects of knowledge with regard to selected agri-business enterprises. Items were collected from various sources such as the scientists of the Kerala Agricultural University and officials of the agri-business promotion agencies. Hence it was assumed that the test could by all means measure the knowledge of the respondents and so the test could be considered as valid.

Method of scoring

The respondents were asked to indicate their responses to the items in the knowledge test and the correct answers were assigned a score of one and incorrect answers a score of zero. There were three items (1, 2 and 10) which warranted two set of responses from the respondents. For such items, for each correct response a

score of one was assigned. Thus the maximum score that could be obtained by a respondent was 13 and minimum zero.

g) Management orientation

Management orientation was operationally defined as the degree to which the respondent is oriented towards scientific management of the enterprise comprising of planning, production and marketing functions.

The scale developed by Samantha (1977) was made use of in the study for measuring management orientation. It consisted of 18 statements. There were six statements each for planning, production and marketing orientation. In each group, positive and negative statements were kept mixed with a more or less psychological order of the statements. In the case of positive statement a score of one was given for agreement and zero for disagreement. For negative statement, the scoring pattern was reversed. The sum of the scores obtained by a respondent was taken as his score for management orientation. The possible score ranged from zero to 18.

h) Personal efficacy

According to Bandura (1986), the concept of self-efficacy represents the extent to which the individual believes that he or she can achieve the desired outcome in a particular situation. Personal efficacy has been perceived as an important factor contributing to the entrepreneurial behaviour of a person. It has been defined as the general sense of adequacy in a person (Pareek and Rao, 1978) and it refers to the potential effectiveness present at the covert (inner) level.

Personal efficacy of a respondent was determined in terms of realisation of his own worth in influencing decisions and functions oriented towards general style of life.

In this study personal efficacy was quantified using the scale developed by Sathy (1982) and followed by Bhagat (1992).

Sathy (1982) proposed four dimensions of personal efficacy viz. goal (active and essence), locus of resources (internal versus external and lack of resources), initiative versus compliance, and problem solving versus problem avoiding.

The detailed definition of the four dimensions selected are given below.

1. Goal

Activity goal: A statement of an end-state where one is continuously engaged in some activity and usually introduced by words indicating, want, wish, etc.

Essence goal: It indicates a label, an identity, a position in life etc.

2. Locus of resource

Internal resource: Expression of resources within a person such as able, prepared, capabilities, etc.

External resource: It indicates the dependency on the outcome of the resources of others.

Lack of resource: Presence of a statement indicating explicitly the lack of specific capabilities relevant to the situation.

3. Initiative versus compliance

Initiative: Here the character defines the task for himself and becomes the source of origin for any activity. Some words which may help in scoring the element are decide, initiate, resolve etc.

Compliance: In this case, problems are defined by some one for the character. eg: A statement such as 'To my disappointment, I became an entrepreneur at my father's pressure'.

4. Problem solving versus problem avoidance

Problem solving : This is indicated by a tendency to solve problems rather than yield to the pressure of the problems.

Problem avoidance: Here, there is a tendency to avoid problems and become depressed in the face of a problem.

The scores were assigned in the following pattern

| | <u>Score</u> |
|---------------------------------|--------------|
| 1. Goal | |
| Active goal | (+1) |
| Essence goal | (-1) |
| 2. Locus of resource | |
| Internal locus of resource | (+1) |
| External locus of resource | (-1) |
| Lack of resource | (-1) |
| 3. Initiative versus compliance | |
| Initiative | (+1) |
| Compliance | (-1) |

4. Problem solving versus problem avoiding

| | |
|------------------|------|
| Problem solving | (+1) |
| Problem avoiding | (-1) |

The score ranged from 4 to -5.

i) Level of aspiration

Level of aspiration refers to the respondent's overall assessment of his concern for wishes and hopes for the future or for the fears and worries about the future in his own real world.

Level of aspiration in the present study was measured using the scale developed by Muthayya (1971) and adopted by Porchezhian (1991) and Jayalekshmi (1996), with slight modifications. The scale consisted of eight statements with many alternatives provided for each item. Scores were assigned to the responses in each statement as given in the interview schedule (Appendix III).

The scores obtained for each statement were summated to get the score on level of aspiration.

j) Leadership ability

Leadership ability was operationalised as the degree to which an agri-business operator can initiate or motivate the actions of other individuals. In this study, this was measured using the three point rating scale developed by Nandapurkar (1982). Five items relating to leadership ability were used in the scale. Response categories for each item were 'always', 'sometimes' and 'never' for

which scores given were 2, 1 and 0 respectively. By summing up the scores, the leadership ability score for a respondent was obtained.

In the present study, entrepreneurial behaviour was conceptualised as a totality of all the ten dimensions described above.

3.3.1.3 Entrepreneurial behaviour index (EBI)

EBI was developed as a weighted index of all the 10 dimensions, viz., innovation proneness, decision making ability, achievement motivation, risk orientation, economic motivation, entrepreneurial knowledge, management orientation, personal efficacy, level of aspiration and leadership ability.

This was measured formulating a mathematical formula index, described as below.

$$EBI = \frac{\sum_{i=1}^K w_i \left[\begin{array}{c} x_i \\ \hline x_{max} \end{array} \right]}{\sum_{i=1}^K w_i}$$

where

- EBI = Entrepreneurial behaviour index
- K = Number of dimensions
- w_i = Relevancy rating score of the i^{th} dimension
- x_i = Score of i^{th} dimension
- x_{max} = Maximum score of the i^{th} dimension

The range of index was between zero and 100.

3.3.2 Criterion variable

It refers to the variable selected for the purpose of finding out the relative importance of various dimensions in the entrepreneurial behaviour index. It serves the purpose of assessing the accuracy of the new measurement procedure with some criterion assumed to be valid. To meet this purpose, and keeping in view the entrepreneurial behaviour concept, agri-business performance (ABP) was selected as criterion variable.

3.3.2.1 Definition and measurement of agri-business performance

Performance is the quality and quantity of inputs reported by Shah (1985). According to Sharma (1985) performance of the entrepreneurs is influenced by the environmental variables i.e., government policies, market conditions, availability of technology, labour situation etc. Bhatnagar (1989) defined performance as a function of ability and motivation of the entrepreneur.

In this study, performance of respondents in their agri-business enterprises was measured using many indicators which get reflected in the improvement of their business enterprise.

Based on review of literature, discussion with experts and observation made by researcher, the crucial indicators of performance were identified. The identified indicators were capacity utilisation, cost-benefit analysis, hired labour, perceived profitability of the enterprise, labour relationship, extent of diversification and social contribution by the enterprise.

3.3.2.2 Measurement of identified indicators of ABP

a) Capacity utilisation

Capacity utilisation is an important and direct factor which finally decides the efficiency of an enterprise. This was considered as one of the components to measure ABP.

Capacity utilisation was operationalised as the extent to which the individual utilises the potential resources such as land, installed capacity, etc. related to his/her enterprise.

The respondents were asked to indicate how much of the potential resources available were utilised (in terms of percentage), out of 100 per cent. The scoring procedure followed by Kumar (1995) was used in the study.

| <u>Response</u> | <u>Score</u> |
|-----------------|--------------|
| 0-25% | 1 |
| 26-50% | 2 |
| 51-75% | 3 |
| 76-100% | 4 |

b) Cost-benefit analysis

Prest and Turney (1995) defined cost-benefit analysis as a practical way of assessing the desirability of the projects, where it is important to take long range view, ie., it implies the enumeration and evaluation of all the relevant cost and benefits.

Cost-benefit analysis provided the Benefit Cost Ratio (BCR). The result indicated return on a rupee of investment. It is the ratio between the present worth of benefits and that of costs.

Benefit cost ratio was calculated on the lines of Kahlon and Tyagi (1983) with slight modifications to meet the purpose of the study, as shown below.

$$\text{BCR} = \frac{\text{Total cost of income}}{\text{Total cost of expenditure}}$$

Where, the total cost income was worked out using the income measures viz., income from main products and by products. The total value of main products and by products per annum was calculated based on the actual local prices of the products.

Total cost of expenditure was assessed by adding value of inputs, value of hired human labour, value of transport, interest on working capital, interest on fixed capital, miscellaneous expenses and rent paid for leased- in land.

The BCR values were categorised into five classes and scores assigned for each class as given below:

n = 240

| SLNo. | Category | Class interval | Score |
|-------|-----------|----------------|-------|
| 1 | Very low | 0.79 - 1.01 | 1 |
| 2 | Low | 1.02 - 1.51 | 2 |
| 3 | Moderate | 1.52 - 2.24 | 3 |
| 4 | High | 2.25 - 3.04 | 4 |
| 5 | Very high | 3.05 -5.67 | 5 |

c) Hired labour

This was operationalised as the total labour hired by the entrepreneur in terms of mandays for the firm, factory and or the office.

This was measured by asking the respondent to indicate the number of labourers hired by him every year for the enterprise.

The total labour mandays hired by the entrepreneur were worked out and categorised into three groups. The categories with corresponding scores are given below:

n = 240

| Sl.No. | Category | Mandays | Score |
|--------|--|----------------|-------|
| 1 | Low ($\bar{X} - 1.96 \times S.E$) | 558 and below | 1 |
| 2 | Medium ($\bar{X} \pm 1.96 \times S.E$) | 559-1399 | 2 |
| 3 | High ($\bar{X} + 1.96 \times S.E$) | 1400 and above | 3 |

d) Perceived profitability of the enterprise

Perceived profitability of the enterprise refers to the degree to which an enterprise has been perceived to be relatively advantageous in terms of economic profit. This was quantified in terms of agribusiness operator's perception regarding the profit from the enterprise. The procedure adopted by Singh (1992) was followed in this study to measure the perceived profitability. The responses were obtained on a five point continuum, as given below.

| <u>Response</u> | <u>Score</u> |
|---------------------|--------------|
| Very much on loss | 1 |
| Somewhat on loss | 2 |
| Somewhat profitable | 3 |
| Profitable | 4 |
| Highly profitable | 5 |

e) Labour relationship

Labour relationship was conceptualised as the quality of the nature of relationship between the agri-business operator and the labourers in his enterprise. The responses were categorised and scores assigned as under.

| <u>Response</u> | <u>Score</u> |
|--------------------|--------------|
| Very much strained | 1 |
| Less strained | 2 |
| Somewhat smooth | 3 |
| Smooth | 4 |
| Very much smooth | 5 |

f) Extent of diversification

This was operationalised as the extent to which an agri-business operator has diversified the main enterprise into different related activities like supply of raw materials to other entrepreneurs, (eg. preservatives, pulp, seedlings, suckers etc.) marketing of the primary product by the respondent himself or establishing own shop for the sale of the product, branching or establishing secondary units for value addition for the produce so as to maximise his economic outcome. The variable was measured by analysing the major diversified activities. One score was assigned to each activity limited to a maximum of 3. The possible score ranged from zero to 3.

g) Social contribution by the enterprise

This was operationally defined as the extent to which an enterprise is perceived as more important for the society in different development areas such as service, infrastructural development, agricultural development, meeting consumption need, health improvement, aesthetic development, preservation and

protection of the environment, production of raw materials for other enterprises, employment generation, etc.

An arbitrary scale was developed to measure the social contribution by the enterprise in consultation with subject matter specialists and entrepreneurs. The scores were assigned to each of the enterprise based on their contributions to the society.

The enterprises such as rice, banana, coconut and oilmill were given the highest score of 5. The lowest score of 3 was given to poultry enterprise. Other enterprises (rubber and food processing) were assigned a score of 4. The enterprises with corresponding scores and details of arriving at scores are given in Appendix IV.

3.3.2.3 Agri-business performance index (ABPI)

Based on the identified seven dimensions as described above, agri-business performance was conceptualised as a totality of all these dimensions viz., capacity utilisation, cost-benefit analysis, hired labour, perceived profitability of the enterprise, labour relationship, extent of diversification and social contribution by the enterprise. A formula index of ABP was developed which is presented below:

$$ABPI = \sum_{i=1}^K \frac{A_i}{P_i} \times 100$$

where

| | |
|-------|--|
| ABPI | - Agri-business performance index |
| A_i | - Actual score of i^{th} dimension |
| P_i | - Potential score of i^{th} dimension |
| K | - Number of dimensions |

The ABPI values ranged from zero to 100.

3.3.3 EBI through Principal Component Analysis (PCA)

EBI was also developed using PCA which is an accepted method of developing an index in any multivariate data situation.

Abraham and Khosla (1965) used PCA to form a single index of the level of incidence of pests and diseases in a field. The index of overall incidence of pests and diseases based on simple ranking method was found to agree closely with the one based on PCA.

Geethakutty (1993) developed fertilizer use behaviour index using PCA which revealed high correlation with the formula index developed through relevancy weightage. In similar lines in this study EBI was developed using PCA also.

The data obtained from 240 respondents on the selected dimensions of entrepreneurial behaviour viz., innovation proneness, decision making ability, achievement motivation, risk orientation, economic motivation, entrepreneurial knowledge, management orientation, personal efficacy, level of aspiration and leadership ability were scored, tabulated and their principal components were extracted through PCA.

3.3.4 Comparison of the EBI by formula and EBI by PCA

The EBI of the 240 respondents which was calculated through the formula method was correlated with the corresponding EBI extracted through the PCA method. This analysis yielded a high correlation coefficient of 0.91 which was significant at 1 per cent level of significance. This established the predictability of

the index developed through the formula method in measuring the entrepreneurial behaviour of the agri-business operators.

3.3.5 Procedure and criteria adopted for grouping the dimensions of entrepreneurial behaviour by factor analysis

Factor analysis was done using the data of 240 respondents obtained on the 10 dimensions of entrepreneurial behaviour index. The inter correlations of the 10 dimensions worked out was initially subjected to principal factor solution to arrive at the minimum number of factors to start with. The eigen values of the 10 factors obtained from factor analysis are presented in Appendix V. In the present study the number of factors whose eigen values were found exceeding one were considered sufficient in describing the dependence structure as followed by Geer (1971) and Youngman (1979). It could be observed from Appendix that out of 10 factors, only one had shown eigen value exceeding one. This factor was then subjected to varimax rotation (Kaiser, 1958) and this yielded the rotated factor loading of the 10 dimensions (Appendix VI). Varimax rotation is a method of maximising the variability when the axes are not orthogonal.

The next step was to identify the important dimensions based on their factor loadings. Fruchter (1954) suggested 0.50, Cattell and Coan (1958) considered 0.74 and Anantharaman (1991) considered 0.45 as minimum limit of factor loading for identification of important dimensions. In this study, the criteria adopted by Cattell and Coan (1958) was followed and the dimensions with factor loading of 0.74 and above were considered as important dimensions and these dimensions were grouped into a single component and was labelled.

3.4 Selection, operationalisation and measurement of independent variables

Based on the objectives, review of literature, discussion with extension scientists and observations made by the researcher, a list of 27 characteristics that could possibly reveal the situational and behavioural characteristics of agri-business operators was prepared. These selected characteristics were subjected to relevancy rating by judges who are qualified and experienced faculty members in the discipline of Agricultural Extension in Kerala Agricultural University, University of Agricultural Sciences, Tamil Nadu Agricultural University, National Dairy Research Institute and Indian Institute of Horticultural Research.

The judges were requested to indicate the relevancy of these variables in influencing the entrepreneurial behaviour and to rate them on five point continuum as most relevant, more relevant, relevant, less relevant and least relevant. The responses were obtained from a total of 53 out of 65 judges selected for relevancy rating.

The frequency of each continuum related to the individual variable was worked out. Then the frequencies pertaining to most relevant and more relevant continuum were added and their percentage was worked out. Those variables rated by more than 70 per cent of the judges as most relevant and/or more relevant were selected for inclusion in the study (Appendix VII).

The variables with their corresponding percentage are given in Appendix VII. The variables thus selected were age, age at entry, education, family background, monthly income, occupational status, economic status, scientific orientation, self concept, self confidence, closeness with support system,

deferred gratification, vocational diversification, orientation towards competition, credit orientation, rational orientation, training experience, self-reliance and media utilisation.

Independent variables and their measurement

1. Age

In the present study, age was defined as the number of calendar years completed by the agri-business operator at the time of interview.

This was measured by directly asking the respondent the number of years he has completed as on 1st January 1997.

2. Age at entry into agri-business

Age at entry was defined as the age at which an agri-business operator entered/established his enterprise.

This was measured by directly asking the respondent to indicate the age when he entered into or established the enterprise.

3. Education

Education refers to the extent of informal or formal learning possessed by the respondent. The different educational levels of the respondents were scored as per the procedure followed in the socio-economic status scale of Trivedi (1963). The scoring procedure was as follows:

| Level of education | Score |
|--------------------|-------|
| Illiterate | 0 |
| Can read only | 1 |
| Can read and write | 2 |
| Primary school | 3 |
| Middle school | 4 |
| High school | 5 |
| College | 6 |
| Above college | 7 |

4. Family background

Both family type and family occupation were taken to account in measuring family background.

Family type: This was dichotomised as 'joint' or 'nuclear' family and was quantified in line with Trivedi's (1963) scoring in SES scale, as given below:

| Type | Score |
|---------|-------|
| Joint | 2 |
| Nuclear | 1 |

Family occupation: Family occupation was broadly classified into two groups 'farming' and 'non-farming' occupation. The scores were assigned as per the procedure of Bhagat (1992).

| Group | Score |
|-------------|-------|
| Farming | 2 |
| Non-farming | 1 |

The scores obtained from family type and family occupation were combined together to get the family background score of individual respondents. The possible range of score in this variable was from one to four.

5. Occupational status

Occupational status was operationally defined as that position of agri-business operator which provides him the main source of income and in which the respondent spends more time and attention.

The occupational status of the respondents was measured using an arbitrary scale developed for the purpose in which both the primary and subsidiary occupations were considered. The occupation of agri-business enterprise alone was given the score of one (which all the respondents obtained) and the occupation of respondent as agri-business enterprise along with any other subsidiary one was given an additional score of one, thus totally two.

6. Monthly income

The income for one month obtained by the respondent was measured by computing the income obtained by him and his family members from main and subsidiary occupations and also other sources. The response was obtained through a direct question posed to the respondent.

7. Economic status

Economic status of the respondent was measured in terms of;

- a. house type
- b. material possession and
- c. fixed assets of the respondent

a) House type

For this study, the scoring procedure adopted by Surendran (1982) was followed with slight modification for measuring the type of house. It was as follows:

| Type | Score |
|----------|-------|
| Thatched | 1 |
| Tiled | 2 |
| Terraced | 3 |

An additional score of 'one' each was assigned to electrified and plastered houses respectively.

b) Material possession

Bhaskaran (1976) and Sivaramakrishnan (1981) used index to measure material possession of farmers in terms of money value of the materials possessed by them. The money value was assigned to each material based on the respondents' assessment and in the case of discrepancies, market value of the materials were

assigned. The same method was followed for the present study also with slight modification. The total money value was worked out. These values were arbitrarily categorised into 5 classes and scores assigned for each class as given below:

| Money value (Rs.) | Score |
|---------------------|-------|
| Upto 40,000 | 1 |
| 40,001 - 80,000 | 2 |
| 80,001 - 1,20,000 | 3 |
| 1,20,001 - 1,60,000 | 4 |
| Above 1,60,000 | 5 |

c) Fixed assets

It includes money value of respondent's house, other buildings, farm structures and total land in his or her possession. The total money value of all these items was worked out and categorised into five arbitrary classes. The scoring procedure followed is indicated below:

| Money value (Rs.) | Score |
|-------------------------------|-------|
| Upto 10 lakhs | 1 |
| Between 10 lakhs and 20 lakhs | 2 |
| Between 20 lakhs and 30 lakhs | 3 |
| Between 30 lakhs and 40 lakhs | 4 |
| Above 40 lakhs | 5 |

Eventually, the scores of all the three categories i.e., house type, material possession and fixed assets were added and this represented the economic status.

8. Scientific orientation

Scientific orientation was operationalised as the degree to which a respondent was oriented to the use of scientific method in decision making in agri-business activities. Scientific orientation scale developed by Supe (1969) was used in this study. The scale consisted of six statements, of which the second one only was negative, while the rest were positive. The scoring for the positive statements in the scale was given below:

| Response | Score |
|-------------------|-------|
| Strongly agree | 5 |
| Agree | 4 |
| Undecided | 3 |
| Disagree | 2 |
| Strongly disagree | 1 |

The scoring pattern was reversed in the case of negative items. The score obtained for each statement was summed up to get the scientific orientation score for an individual respondent. The possible range of score in this scale was from 6 to 30.

9. Deferred gratification

Rogers (1970) considered deferred gratification as pattern of consistent sets of connected behaviour acquired by individuals through personality socialisation in early life. Rogers further noted that upward mobility certainly depends in part of the ability to postpone immediate gratification for the sake of long

range ends. According to Betru (1997) deferred gratification is the feeling of individual toward the postponement of their immediate satisfaction in anticipation of future rewards.

In the present study, deferred gratification was operationally defined as the degree to which an entrepreneur takes interest in spending his/her saved money towards long term purpose by deferring or sacrificing the immediate satisfaction or benefits. This was measured using the scale developed by Sen (1969) and adopted by Porchezian (1991). The scale consisted of eight statements. The responses were scored in terms of the nature of gratification identified (details are given in Appendix III, item No.9). The range of the score between 1 and 8.

10. Vocational diversification

Vocational diversification has been operationalised as taking up any complementary and/or supplementary occupation(s) by the respondent with a view to increase their income. This was measured following the procedure adopted by Somasundaram (1976) and Sethy (1982) with necessary modifications as given below:

| | Score |
|--|-------|
| Enterprise alone | 1 |
| Enterprise + caste occupation/employment/ business | 2 |
| Enterprise + caste occupation + employment | 3 |
| Enterprise + caste occupation + business | 3 |
| Enterprise + employment + business | 3 |
| Enterprise + caste occupation + employment + business | 4 |

11. Self confidence

Self confidence referred to the feeling of an individual about his ability, initiative and zeal to achieve his goal or aim. This variable was measured by the scale developed by Basavanna (1971) and modified by Prasad (1983).

The scale consisted of ten statements. The statements 3, 6 and 10 were positive while the remaining were negative. The responses on these statements were obtained as either agree or disagree. For an 'agree' response on the positive statements and 'disagree' response on the negative statements, a score of one was assigned. Similarly for a 'disagree' response on the positive statements and an 'agree' response on the negative statements, zero score was assigned. The summation of the scores obtained by an individual indicated his level of self confidence. The possible score varied from zero to ten.

12. Self concept

Self concept was operationalised as the extent to which a respondent perceives about himself, and how far he had refined his personality through interaction with others.

Sarma (1974) used the personality word list technique to measure the aspects of self concept by measuring separately what he thinks at present and what he thinks to be in future. Deo (1974) developed personality word list for measuring aspects of self concept.

In this study, the scale developed by Joseph (1983) was used. The scale consisted of eight statements, of which the statements 6 and 8 were negative while

the rest were positive. The scoring for the positive statements in the scale was given below.

| Response | Score |
|-------------------|-------|
| Strongly agree | 5 |
| Agree | 4 |
| Undecided | 3 |
| Disagree | 2 |
| Strongly disagree | 1 |

The scoring pattern was reversed in the case of negative items. The score obtained for each statement was summed up to get the self concept score of an individual respondent. The possible range of score in the scale was from 8 to 40.

13. Closeness with support system

This variable referred to the extent to which the respondent makes contact with the personnel of various agencies and organisations related to his enterprise(s). Bora (1986) measured closeness with agricultural support system of farmers by preparing the list of personnel and various organisations and asking the respondents to indicate their closeness in respect of each of the personnel. The list of personnel and organisations were modified in consultation with subject matter specialists and entrepreneurs for use in this study (details are given in Appendix III, item No.13). The respondents were asked to indicate their responses on a four-point continuum namely, most often, often, sometimes and never with weightages 3, 2, 1 and 0 respectively. By summing up the scores, closeness with support system score of a respondent was obtained.

14. Orientation towards competition

Orientation towards competition referred to the degree to which a respondent is oriented to place himself in a competitive situation in relation to others for projecting his excellence in agri-business activity. This was measured using the scale developed by Singh (1981) and adopted by Anantharaman (1991). The scale consisted of six statements of which the third and sixth statements indicated negative orientation. Each statement was provided with four point response categories namely strongly agree, agree, disagree and strongly disagree with weights of 4, 3, 2 and 1 respectively for positive statements and 1, 2, 3 and 4 respectively for negative statements.

The response to each statement by the respondent was noted and the summation of the weightages gave the score for orientation towards competition by the respondent. The range of the scores was from 6 to 24.

15. Credit orientation

Credit orientation was operationalised as the respondent's orientation to avail and utilise the loan facilities of different organisations and agencies promoting the development of agri-business enterprises.

The borrowing behaviour of the respondents was measured in particular to know the extent to which they utilise these organisations or agencies. It was measured with the help of a scale developed by Mishra (1979) and the scoring procedure adopted by Sethy (1982) was followed (details are given in Appendix VIII).

16. Rational orientation

Rational orientation was operationalised as the extent of rationality and scientific mind exhibited by a respondent in relation to various scientific recommendations.

The procedure developed by Jetley (1977) and adopted by Manju (1996) was used to measure the rational orientation of the respondents.

The rational orientation scale consisted of three statements viz., belief in stars, belief in stars and scientific recommendations and belief only in scientific recommendations with scores of 1, 2 and 3 respectively. The range of the total score for the rational orientation was from 1 to 3.

17. Training experience

Training experience of the respondent was measured in terms of

- a) type of training institution, and
- b) total number of mandays attended

a) Training institution

Training institution refers to the type of institution where the respondent had received training related to his enterprise. If the respondent had received training in a non-recognised institution, a score of one was given and score of two for recognised/government institution. Training in recognised/government institution, helps the entrepreneurs to get recognition and financial assistance from agri-business promoting agencies easily than training in non-recognised institution. Hence an increased score of two was given for such response.

b) Number of mandays attended

Since the total number of mandays of training attended by the respondents varied (in the present case from 0 to 182) the total number of weeks was considered.

The score for training experience was worked out by multiplying the score for type of training institution with total number of weeks. The obtained value of training experience was considered as respondent's training experience score.

18. Self reliance

Self-reliance was operationalised as the extent to which the individual perceives and performs the different activities related to his life by himself without any dependence on others.

The respondents were asked to indicate how much of their future (in terms of percentage) they feel depend on themselves, out of 100 per cent. The scoring procedure followed by Damodaran (1994) was utilised in this study to measure the response.

| Percentage | Score |
|--------------|-------|
| 100 | 5 |
| 75-99 | 4 |
| 50-74 | 3 |
| 25-49 | 2 |
| Less than 25 | 1 |

19. Media utilisation

The media utilisation was operationally defined as the extent of use of different mass media sources by the respondent to get the latest technologies, marketing aspects, etc. related to the enterprise.. The procedure followed by Nair (1969) was adopted in the present study. Each respondent was asked to indicate as to how often he utilize the various mass media sources.

The range of response and scoring pattern was as follows:

| Frequency | Score |
|--------------------------|-------|
| Most often (once a week) | 4 |
| Often (once a fortnight) | 3 |
| Sometimes (once a month) | 2 |
| Rarely (once a year) | 1 |

The scores were summed up across each item to get the media utilisation score.

3.5 Constraints experienced by agri-business operators

Based on review of literature and discussion with experts of agri-business promotion agencies, six important constraints along with its nature of difficulties/problems were identified.

The procedure used for ranking the constraints was:

The response to each constraint along with its nature of difficulties/problems was obtained on a five point continuum viz., most important, more important, important, less important and least important with weights of 5, 4,

3, 2 and 1. respectively. For each constraint, the frequency of the response under each category was multiplied with its respective weightage and added up to get the total score for that particular constraint. Then the constraints were ranked based on the observed frequency score in the descending order of importance. In the same manner, perceived constraints of three subcategories of respondents were also ranked. The comparison of the constraints among the three categories of respondents was carried out. As the number of respondents in each category were different, the expected frequency score was worked out. Expected frequency score was calculated by the ratio of scores obtained with respect to each constraint to the number of respondents multiplied by 100. In addition to the above, the obtained score pertaining to all constraints were added and correlation was worked out with their entrepreneurial behaviour index values.

3.6 Procedure employed in data collection

A pilot study was conducted with the selected nineteen independent variables with the dependent variable and the criterion variable in a non-sample area. Thirty respondents such as commercial farmers, on-farm agri-business operators and off-farm agri-business operators were selected for the pilot study

The EBI of the 30 respondents calculated through the formula method was correlated with their ABPI that was also calculated through the formula method. The 'r' value (0.94) obtained was significant at 1 per cent level of significance.

According to the responses, the schedule was restructured with appropriate corrections and modifications. The final interview schedule used for data collection is given in Appendix III.

The data collection was carried out during May to September 1997. The data were collected through personal interview taking into consideration the guidelines and recommendations suggested by Campbell *et al.* (1979) to ensure maximum accuracy.

3.7 Statistical tools used in the study

The data collected from the agri-business operators were coded, compiled and analysed using the following statistical techniques. Assuming that the data were at least in the ordinal level of measurement and distributed with considerable degree of homogeneity of variance, more of parametric tests were used. The data were analysed using the facilities available at the Computer centre of the College of Horticulture, Vellanikkara.

3.7.1 Delinious-Hodges cumulative method of classification

Delinious-Hodges cumulative method as explained by Delinious and Gurney (1951) was used to classify the respondents. Having arranged data into ascending or descending order, several arbitrary classes were formed depending on the number of classes to be finally obtained. The upper limit of each class was obtained using the formula

$$U = 1 + \left[\frac{Nk - m}{f} \right] c$$

where

U = upper limit of the new class

k = quartile number

N = $\sum \sqrt{f}$

l = lower limit of the quartile class

m = cum \sqrt{f} below the quartile class

f = frequency of the quartile class

c = class interval of the arbitrary classes

3.7.2 Pearson's product moment correlation

This measure was used to assess the nature and degree of relationship between the independent variables and the dependent variable (y) and also among the independent variables.

3.7.3 ANOVA

Analysis of variance (ANOVA), a powerful test of significance when comparisons across more than two categories are involved. This test was utilized as given by Fisher (1950) for the present investigation to make comparisons between commercial farmers, on-farm agri-business operators and off-farm agri-business operators on their entrepreneurial behaviour.

3.7.4 Kendall's coefficient of concordance (W)

Kendall's coefficient of concordance ' W ' was computed following the procedure adopted by Geethakutty (1993) to know whether the order of rankings obtained on the various constraints influencing EBI by the three different categories of respondents were in agreement with one another.

3.7.5 Multiple linear regression analysis

Multiple linear regression analysis was done to determine the net contribution of the selected independent variables to the dependent variable. This gives the percentage of variation that a set of independent variables jointly explains on the dependent variable.

The regression equation employed in the study was

$$Y = a + b_1x_1 + b_2x_2 \dots\dots\dots + b_nx_n$$

where

Y = dependent variable

a = intercept

x₁.....x_n = independent variables

b₁.....b_n = regression coefficients

The high R² values and significant R value suggest the desirability of regression analysis in predicting the dependent variable. The test of significance of regression coefficients (b's) was carried out with the help of 't' value computed.

3.7.6 Step down regression analysis

This was done to identify those variables with the maximum contribution towards predicting the dependent variable, by eliminating the variables of less importance. The step-wise regression analysis selects the best sub-set of variables that contribute maximum variability to dependent variable as suggested by Draper and Smith (1966).

3.7.7 Principal component analysis

A principal component analysis (PCA) of a set of 'm' original variables generates 'm' new variables, the 'principal components' PC_1, PC_2, \dots, PC_m with each principal component being a linear combination of the subjects scores on the original variables. The principal components of a set of variables are uncorrelated with each other and they are hierarchially ordered in terms of their variance, with the i^{th} principal component having the i^{th} largest variance.

The variance of a variable is, of course, a measure of the extent to which subjects differ in their scores on that variable. It is thus reasonable to interpret PC_1 as that linear combination of the original variables whose variance is greatest for all coefficient vectors. PCA is thus a sort of 'internal discriminant analysis' (Harris, 1975). The test was applied in the present study to develop entrepreneurial behaviour index so that the importance of each dimension can be traced through the factor loadings. This analysis was done using SPAR-1 package developed by IASRI, New Delhi which is available at College of Horticulture, Vellanikkara.

3.7.8 Factor analysis

Factor analysis, according to Kerlinger (1964) is a method for determining the number and nature of the underlying variables among larger numbers of measures. More succinctly, it is a method for determining 'k' underlying variables (factors) from 'n' sets of measures, 'k' being less than 'n'. It may also be called a method for extracting common factor variances from sets of measures. Factor analysis reduces the multiplicity of tests and measures to greater simplicity. It tells us, in effect, what tests or measures belong together, or in other words which ones virtually measure the same thing and how much they do so. It helps the scientists to locate and identify unities or fundamental properties underlying tests

and measures. In the present study, factor analysis was employed to identify the factors or groupings based on similar properties, among the dimensions of entrepreneurial behaviour. The factor analysis was done using SPSS programme available at KFRI, Thrissur.

3.8 Hypotheses of the study

Keeping in view the objectives, review of literature and conceptual orientation of the study, the following null hypotheses were framed for the investigation.

1. There will be no significant difference among the various agri-business operators viz., commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their entrepreneurial behaviour.
2. There will be no significant difference among the various agri-business operators viz., commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to agri-business performance.
3. There will be no significant relationship between the entrepreneurial behaviour and agri-business performance.
4. There will be no significant relationship between the EBI of agri-business operators and their perception about constraints and problems.
5. There will be no significant relationship between the ABPI of agri-business operators and their perception about constraints and problems.

Results and Discussion

4. RESULTS AND DISCUSSION

The findings of the study and the discussion there on are presented in this chapter under the following sub-heads.

- 4.1 Important dimensions of entrepreneurial behaviour
- 4.2 Distribution of the agri-business operators and comparison of commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their entrepreneurial behaviour
- 4.3 Distribution of the respondents and comparison of commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their agri-business performance
- 4.4 Relationship between entrepreneurial behaviour of the agri-business operators and their agri-business performance
- 4.5 Socio-economic and personal profile of the agri-business operators
- 4.6 Influence of behavioural and situational characteristics of agri-business operators on their entrepreneurial behaviour
- 4.7 Constraints as perceived by the agri-business operators which influence their entrepreneurial behaviour and agri-business performance
- 4.8 Relationship between constraints perceived by the agri-business operators and their entrepreneurial behaviour and agri-business performance
- 4.9 Strategies for entrepreneurship development in the agri-business sector

4.1 Important dimensions of entrepreneurial behaviour

The data on the dimensions of entrepreneurial behaviour were subjected to factor analysis. Six dimensions were identified as important through varimax rotation of factor analysis (the cut of value 0.74 fixed for the study) and the

identified dimensions were grouped into a single factor, termed 'entrepreneurial behaviour efficiency' (Table 3).

Table 3. Dimensions of entrepreneurial behaviour efficiency (Factor 1)

| Sl.No. | Dimension | Factor loading |
|--------|------------------------|----------------|
| 1 | Innovation proneness | 0.77204 |
| 2 | Achievement motivation | 0.78489 |
| 3 | Risk orientation | 0.82865 |
| 4 | Economic motivation | 0.77500 |
| 5 | Management orientation | 0.77365 |
| 6 | Personal efficacy | 0.75129 |

The six important dimensions of entrepreneurial behaviour identified are risk orientation, achievement motivation, economic motivation, management orientation, innovation proneness and personal efficacy. The totality of these dimensions are considered to indicate the entrepreneurial behaviour efficiency of an agri-business operator. Each of these dimensions are explained below.

4.1.1 Risk orientation

The results presented in Table 3 reveals that in the case of agri-business operators, risk orientation is one of the important dimensions with the highest factor loading of 0.82865. An individual involved in any agri-business enterprise will no doubt be at the mercy of various risks such as uncertainty in climatic factors, market fluctuations and nonavailability of critical inputs.

Risk is an unavoidable factor right from the very establishment of an enterprise which poses great difficulties. This becomes the biggest challenge of an entrepreneur in taking up any business activity. The term 'risk' refers to an outcome which leads to lossess or deviations of realizations from expectations (Heady *et al.*, 1957). However, risk orientation in the case of an entrepreneur indicates his

readiness to face challenges whenever they occur aiming at the probably for a better chance of success. Success depends not only on chance but on one's own efforts.

Risk orientation among entrepreneurs differs widely. Beal and Sibley (1967) had pointed out that individuals vary in willingness to take risk. The importance of risk orientation in agricultural enterprises was also reported by Rajendran (1992) and Damodaran (1994). The minimax-maximum postulates (Tisdele, 1968) reflecting individual tendency to minimise risk and maximise profits in varying circumstances could very well substantiate the importance of risk in an enterprise. It is a known fact that only persons willing and ready to take risks have succeeded in business enterprises.

Studies of Viju (1985) and Rajendran (1992) have indicated the significant relationship of risk orientation with adoption/utilization of improved agricultural practices among farmers.

The importance of risk could be further emphasised by the adult learning theory of Kolb (1984), which explains that the entrepreneurs make many active experiments (i.e., accepting risks) there by generating many concrete experiences.

The above discussion clearly brings to light that risk orientation has a definite bearing on entrepreneurial behaviour efficiency of agri-business operators.

The present finding highlighting the salience of risk bearing dimension on entrepreneurial behaviour is supported by studies of Nadkarni (1988), Herbert and Link (1989), Perumal *et al.* (1990), Kokate and Nand (1991) and Bhagat (1992).

4.1.2 Achievement motivation

Achievement motivation has emerged as an important dimension in relation to entrepreneurial behaviour. According to McClelland and Winter (1969), 'the need to achieve or the urge to improve, ought to be viewed simply as one variable among the many or as an index reflecting various habits or thoughts and actions which are important for economic development'. Atkinson and Rayner (1966) had opined that people with high achievement motive seek out, enjoy and do well at jobs that are entrepreneurial in nature.

The theory of motivation by Murray (1938) explained the need to achieve as a desire and effort to accomplish something difficult, to master, manipulate or organise physical objects or ideas. Atkinson (1958) conceived achievement motivation as a talent disposition to strive for a particular goal, state or aim.

Pareek and Nadkarni (1978) had referred achievement motivation as 'efficiency motivation', an urge to do something unique or to make the maximum utilization of resources.

Studies of entrepreneurship have clearly indicated the importance of achievement motivation in the development of entrepreneurial behaviour (Nandapurkar, 1982; Raghavacharyulu, 1983; Porchezian, 1991 and Jayalekshmi, 1996). Thus, achievement motivation play a key role in entrepreneurial development is further emphasised by the observed high factor loading (0.78489).

4.1.3 Economic motivation

Economic motivation was found important in the case of entrepreneurial behaviour with a factor loading of 0.77500. Hagen (1964) described entrepreneur as

an economic man who tries to maximise profit by utilizing innovations. Economic motivation directs an entrepreneur towards profit augmentation and helps him to make more money out of his enterprises by utilising his resources.

Economic motivation is one of the important motives which moulds the entrepreneurial behaviour of individuals. Moreover economic gain might be the foremost goal in starting an enterprise. Viewed in this angle, the result is quite logical. This result is in confirmity with the findings of Porchezian (1991); Sarmah and Singh (1994) and Jayalekshmi (1996).

4.1.4 Management orientation

This dimension yielded a factor loading of 0.77365. Management, by definition, is 'getting things done' and efficient management is considered as a crucial factor for any profitable enterprise. Progress, prosperity and success of any system mainly depend on the managerial role played by its operators. An individual with high managerial efficiency can naturally utilize the available resources effectively towards the set goal.

Management orientation includes planning, production and marketing orientation, as given by Samantha (1977). According to Downey and Erickson (1987) planning can be defined as forward thinking about courses of action based on full understanding of all factors involved and directed at specific objectives. Production can be described as the set of procedures and activities that result in the creation of product or service. Marketing as a management process attempts to match the resources of the business with identified customer needs and is concerned with the supply of an demand for goods, services and ideas in the society at large.



Management orientation shapes the entrepreneurs into better managers which in turn may help them in proper planning, maximising the production and efficient marketing which are crucial process of their enterprises. It is relevant to note here the observations of Jayalakshmi (1996) who reported that management orientation is an important factor with significant contribution towards entrepreneurial behaviour. The present finding also gains support from Ramakrishnan (1979); Rajagopalan (1989) and Akbar (1990).

4.1.5 Innovation proneness

The importance of innovation proneness in entrepreneurial behaviour is reflected in its factor loading of 0.77204. Innovations are special tools for entrepreneurs, the means by which they exploit 'change' as an opportunity for a different business or service. This could be supported by the concept of windfall profit (Rogers and Shoemaker, 1971). According to them, being the first in the field, innovators frequently reap a kind of economic gain usually referred to as windfall profits. Accordingly, entrepreneurs are also innovators, who search purposefully for the various sources of innovations, the changes and their symptoms that indicate opportunities for their successful functioning.

De (1986) reported that the entrepreneur's desire and eagerness to create something new or different or change will increase their entrepreneurial spirit. Innovation proneness was also identified as an important dimension of entrepreneurial behaviour of farmers by Raghavacharyulu (1983) and Porchezian (1991).

4.1.6 Personal efficacy

Personal efficacy as a dimension of entrepreneurial behaviour yielded a factor loading of 0.75129. Personal efficacy indicates the potential effectiveness

present in a person. Entrepreneurship is essentially an activist behaviour. An entrepreneur shows a creative and dynamic response to the changing environment. Hence, it is essential for such a person to feel competent enough about himself. According to Charms (1968) 'such entrepreneurs do not think that they are pawns in the hands of other people and circumstances. They have a sense of competence and adequacy. They think positive about themselves and their ability'. A sense of personal efficacy and positive self image therefore, are indicative characteristics of entrepreneurs. Persons having such sense of subjective competence or personal efficacy tend to show certain behavioural characteristics (Mehta, 1976). Pareek and Rao (1978) have defined personal efficacy 'as the general sense of adequacy in a person'. They further added that 'people who have high personal efficacy are more likely to be effective in life than those whose personal efficacy is low. Entrepreneurs generally have personal efficacy'.

Mehta (1976) elaborated the concept of efficacy and reported that personal efficacy would help entrepreneurs to take initiative, think of ways and means of achieving goals and tend to approach problem with a view to solve them. Hence an agri-business operator who has high personal efficacy will think about activity goals, make use of outside resources, possess initiative to start a chain of activities, and express a problem solving approach. These characters tend to make the agri-business operators, more entrepreneurial. Sethy (1982) and Bhagat (1992) have also reported personal efficacy as an important characteristic of an entrepreneur.

It is evident that the insight obtained through the analysis of these dimensions would help one to study and to modify the entrepreneurial behaviour of an agri-business operator.

High entrepreneurial behaviour efficiency will help the entrepreneur to take economic decisions as what to produce, how much to produce, when to produce and what method of production to adopt. It will also help the entrepreneur to anticipate and face fluctuations both in the exogenous and endogenous environment of the enterprise.

4.2 Distribution of the agri-business operators and comparison of commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their entrepreneurial behaviour

4.2.1 Distribution of the agri-business operators with respect to their entrepreneurial behaviour (EB)

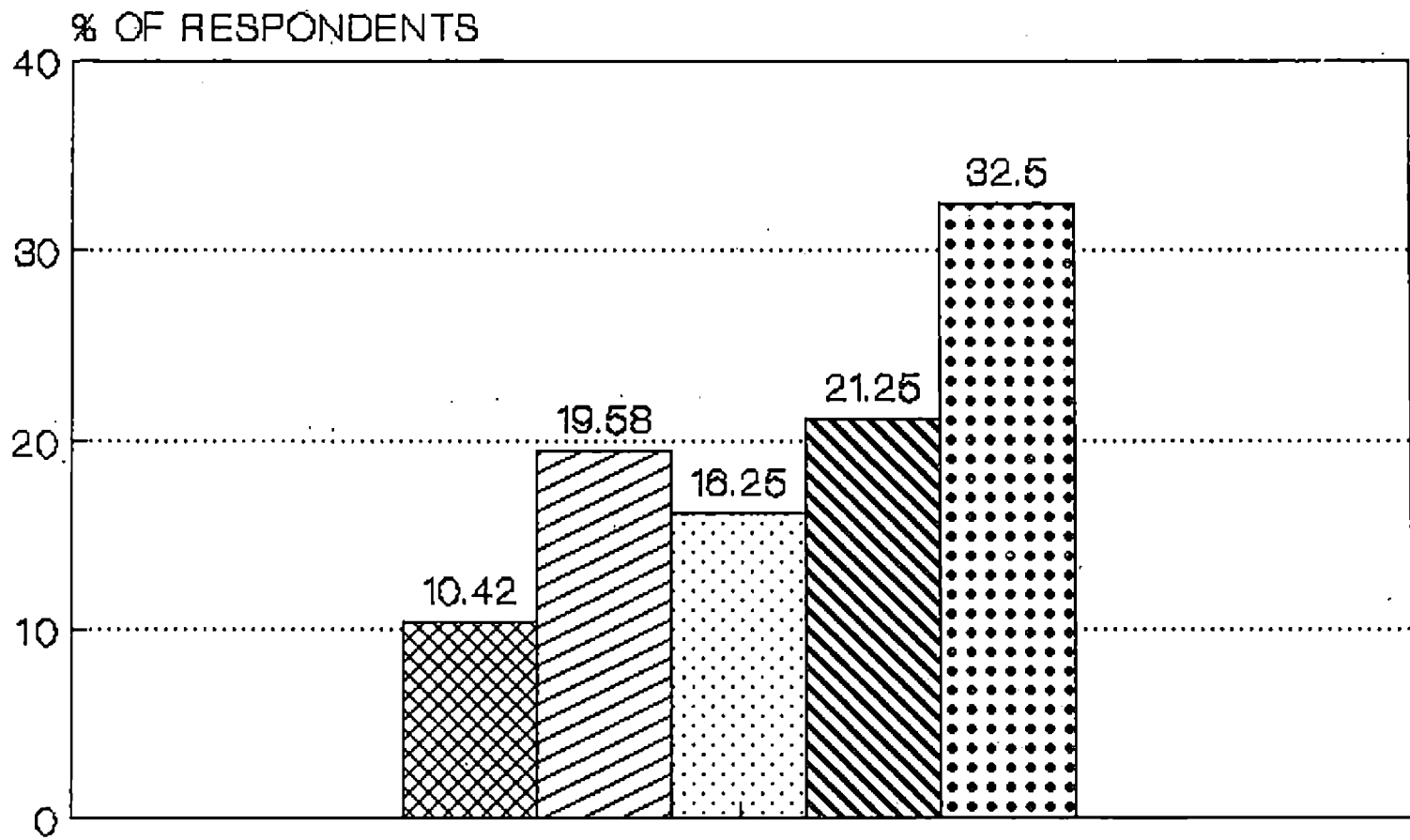
The distribution of agri-business operators with respect to their entrepreneurial behaviour indices was obtained using Delinious-Hodges stratification procedure and the results are presented in Table 4 (Fig.4).

Table 4. Distribution of agri-business operators with respect to their EB

n = 240

| Sl.No. | Category | Class interval | f | Percentage |
|--------|-----------|----------------|----|------------|
| 1 | Very low | Below 40.58 | 25 | 10.42 |
| 2 | Low | 40.59 to 55.33 | 47 | 19.58 |
| 3 | Moderate | 55.34 to 65.94 | 39 | 16.25 |
| 4 | High | 65.95 to 75.66 | 51 | 21.25 |
| 5 | Very high | Above 75.66 | 78 | 32.50 |

The table highlights that majority of (70%) the agri-business operators were in the range of moderate to very high EBI which details that 32.50 per cent, 21.25 per cent and 16.25 per cent had very high, high and moderate EBI respectively.



AGRI-BUSINESS OPERATORS

VERY LOW

 LOW

 MODERATE

 HIGH

 VERYHIGH

Fig.4 Distribution of ABOs according to their entrepreneurial behaviour

As the respondents of the study were commercial farmers, on-farm agri-business operators and off-farm agri-business operators, there is a need to analyse further their category wise distribution (Table 5, 6 and 7).

Table 5. Distribution of commercial farmers with respect to EB

n = 120

| Sl.No. | Categories | Class interval | f | Percentage |
|--------|------------|----------------|----|------------|
| 1 | Very low | Below 42.04 | 15 | 12.50 |
| 2 | Low | 42.05 to 56.96 | 22 | 18.33 |
| 3 | Moderate | 56.97 to 68.32 | 20 | 16.67 |
| 4 | High | 68.33 to 77.36 | 36 | 30.00 |
| 5 | Very high | Above 77.37 | 27 | 22.50 |

Table 5 (Fig.5) depicts the distribution of commercial farmers with respect to their EBI. A perusal of the table clearly indicates the comparatively higher percentage of farmers under high (30.00%) and very high (22.50%) categories.

Table 6. Distribution of on-farm agri-business operators with respect to EB

n = 60

| Sl.No. | Category | Class interval | f | Percentage |
|--------|-----------|----------------|----|------------|
| 1 | Very low | Below 43.49 | 8 | 13.33 |
| 2 | Low | 43.50 to 55.66 | 11 | 18.33 |
| 3 | Moderate | 55.67 to 68.10 | 14 | 23.34 |
| 4 | High | 68.11 to 77.10 | 9 | 15.00 |
| 5 | Very high | Above 77.11 | 18 | 30.00 |

EBI of on-farm agri-business operators is shown in Table 6 (Fig.6). As evident, 30 per cent of the on-farm agri-business operators had very high level of EBI followed by 23.34 per cent with moderate level of EBI. 15 per cent had high level of EBI.

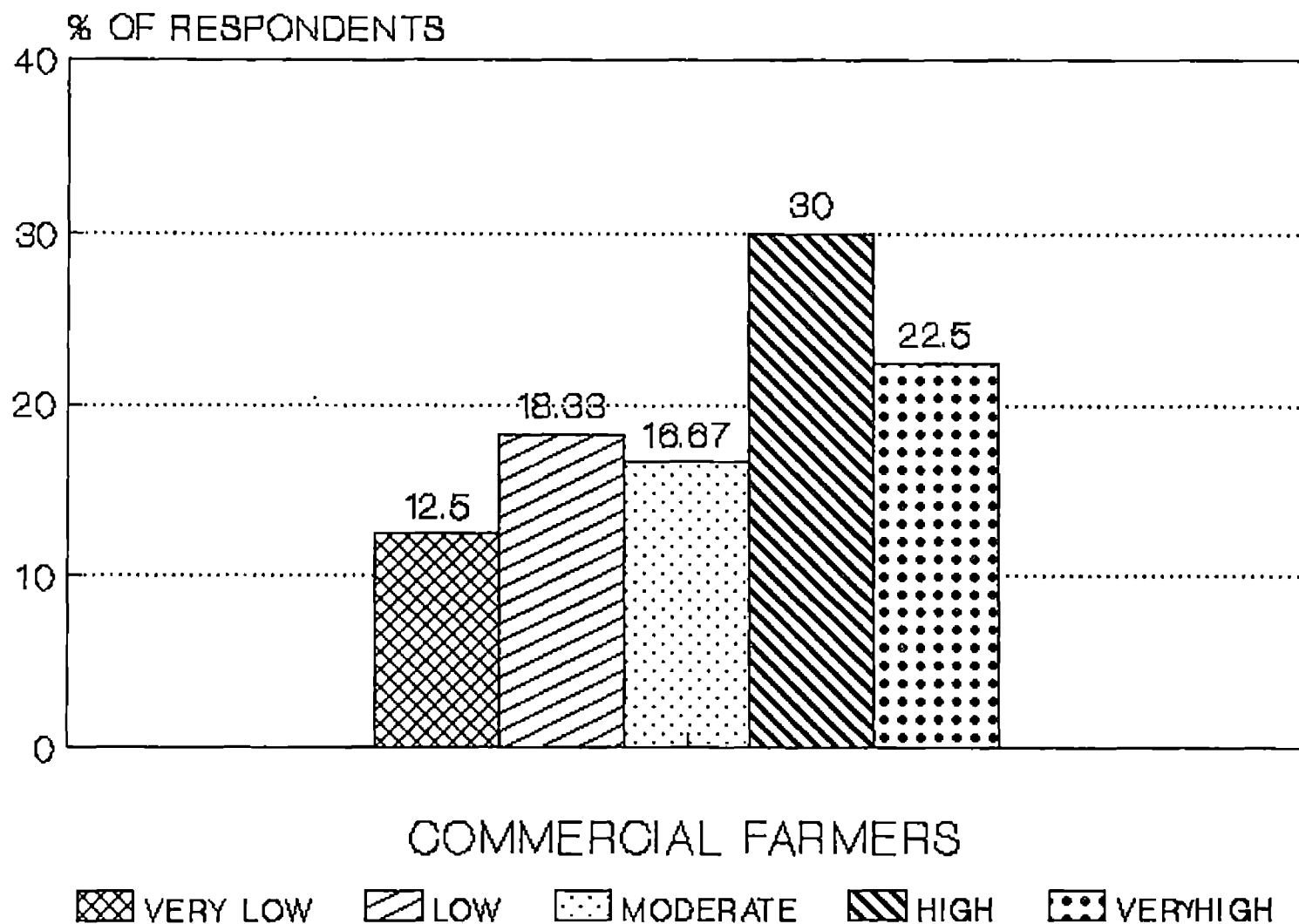
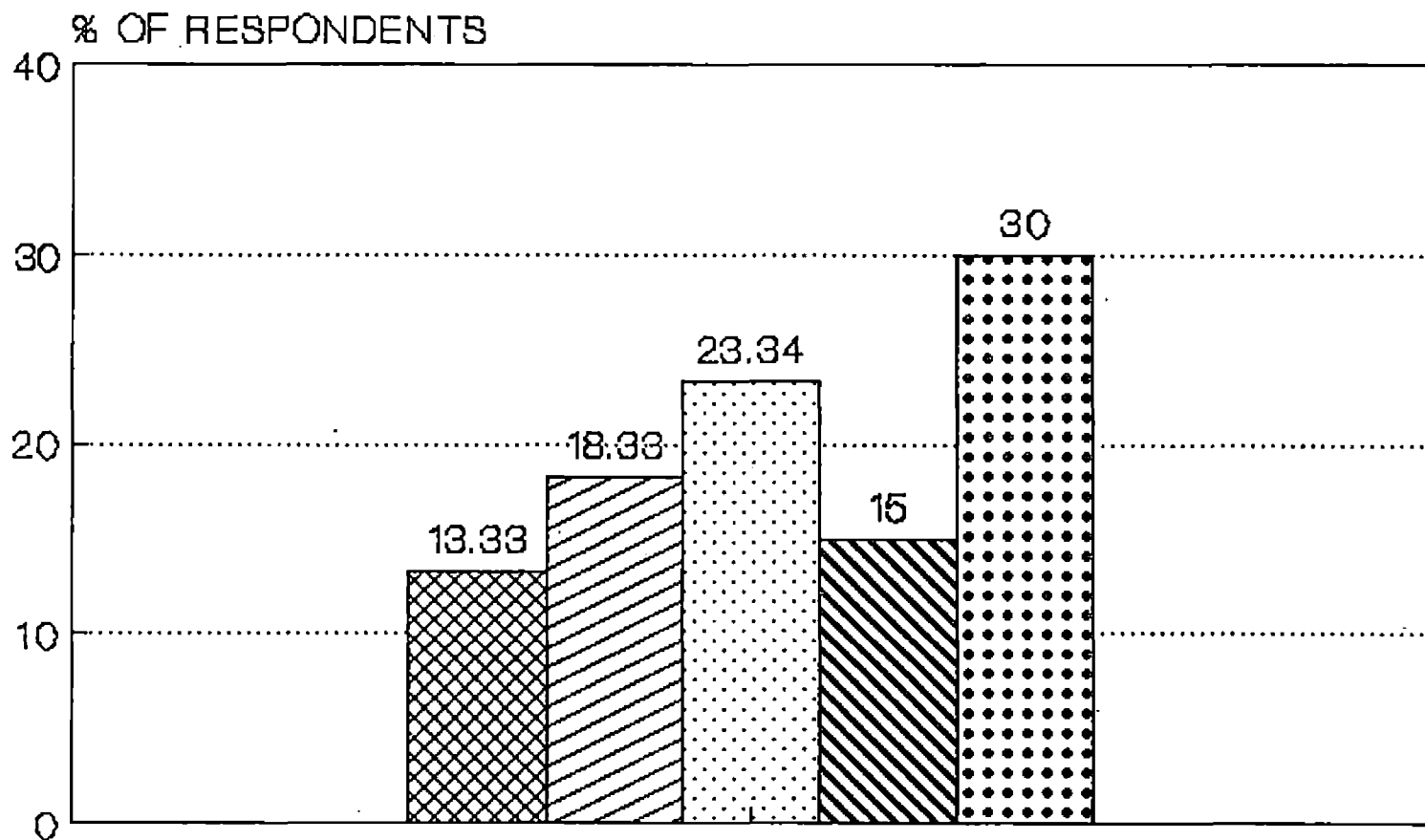


Fig.5 Distribution of Commercial farmers according to their entrepreneurial behaviour



ON FARM AGRI-BUSINESS OPERATORS

VERY LOW

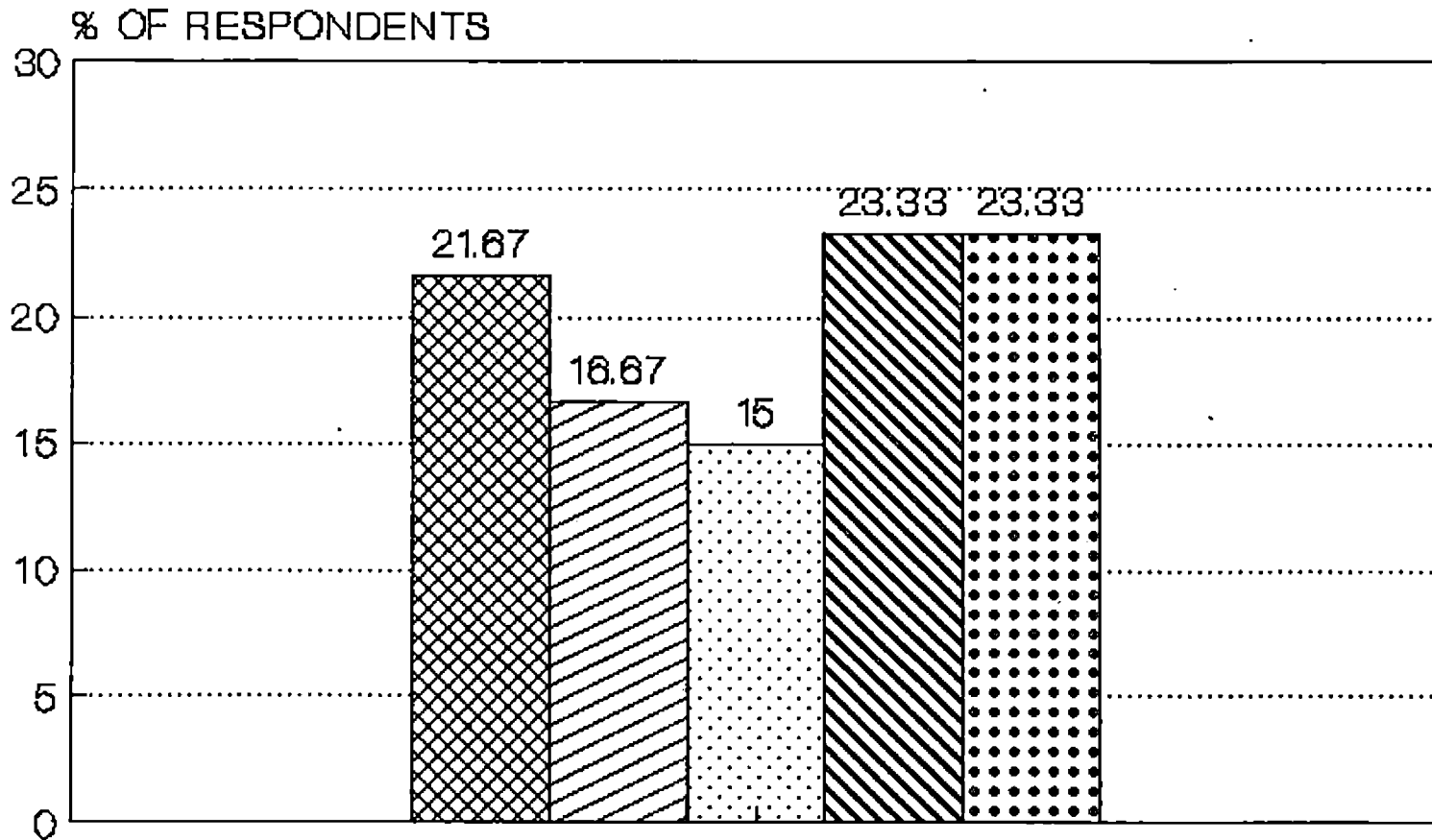
 LOW

 MODERATE

 HIGH

 VERYHIGH

Fig.6 Distribution of On-farm ABOs according to their entrepreneurial behaviour



OFF FARM AGRI-BUSINESS OPERATORS

VERY LOW

 LOW

 MODERATE

 HIGH

 VERYHIGH

Fig.7 Distribution of Off-farm ABOs according to their entrepreneurial behaviour

Table 7. Distribution of off-farm agri-business operators with respect to EB
n = 60

| Sl.No. | Category | Class intervals | f | Percentage |
|--------|-----------|-----------------|----|------------|
| 1 | Very low | Below 47.82 | 13 | 21.67 |
| 2 | Low | 47.83 to 58.64 | 10 | 16.67 |
| 3 | Moderate | 58.65 to 71.00 | 9 | 15.00 |
| 4 | High | 71.01 to 79.61 | 14 | 23.33 |
| 5 | Very high | Above 79.62 | 14 | 23.33 |

Table 7 (Fig.7) depicts that nearly half of the off-farm agri-business operators were in the range of high to very high EB.

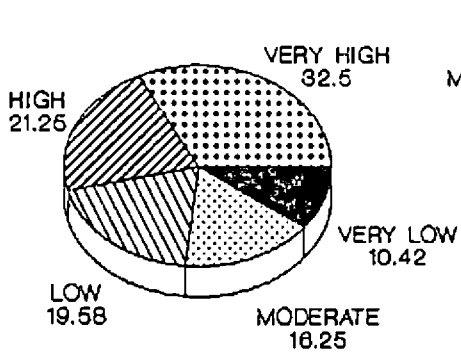
The comparison of the commercial farmers, on-farm and off-farm agri-business operators with respect to their EB are epitomised in Table 8 (Fig.8).

Table 8. Comparison of the commercial farmers, on-farm and off-farm agri-business operators with respect to their EB
(n=240)

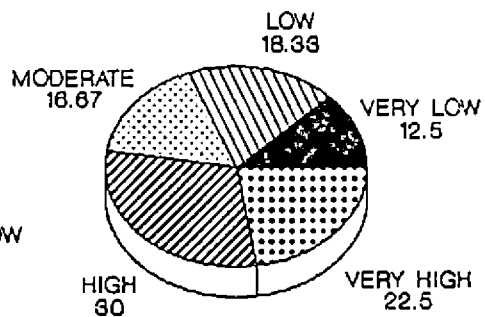
| Source | df | MS | 'F' value |
|-----------------|-----|--------|--------------------|
| Between classes | 2 | 103.13 | 0.36 ^{NS} |
| Within classes | 237 | 285.00 | |

NS - Non-significant

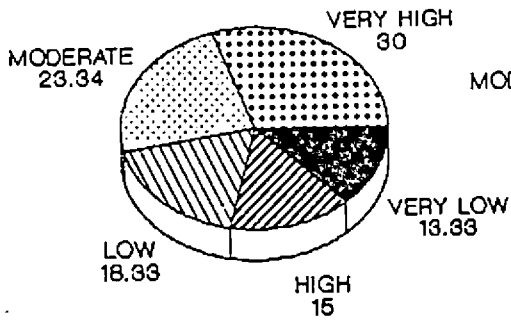
The conclusion from Tables 5,6 and 7 and the ANOVA presented in Table 8 enable one to accept the null hypothesis that there is no significant difference among the different categories of agri-business operators i.e., commercial



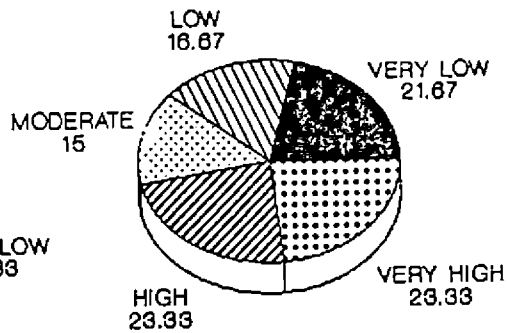
AGRI-BUSINESS OPERATORS



COMMERCIAL FARMERS



ON-FARM ABO's



OFF FARM ABO's

FIG.8 COMPARISON OF THE DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR ENTREPRENEURIAL BEHAVIOUR

farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their EB. This outcome of the study was quite unexpected as it was natural to assume that these entrepreneurs like off-farm business and on-farm business who have take up 'non-conventional' farm activities may be different from the conventional farm business i.e., commercial farmers in their entrepreneurial attributes and traits. However, it is but natural that the three categories of entrepreneurs with respect to their EBI did not exhibit significant difference, since the 'natural traits' of entrepreneurs do not vary much as all the farmer respondents of the study are 'Commercial farmers'. The present finding gains support from Heredero (1979) and Harper and Vyakaranam (1988) who had reported that agricultural operations and business operations are of the same kind.

4.3 Distribution of the respondents and comparison of commercial farmers, on-farm and off-farm agri-business operators with respect to their agri-business performance

4.3.1 Distribution of agri-business operators with respect to their agri-business performance (ABP)

The distribution of respondents with respect to their agri-business performance ($\bar{A}\bar{B}\bar{P}$) is depicted in Table 9.

Table 9. Distribution of agri-business operators with respect to ABP

n = 240

| Sl.No. | Category | Class intervals | f | Percentage |
|--------|-----------|-----------------|----|------------|
| 1 | Very low | Below 55.51 | 22 | 9.17 |
| 2 | Low | 55.52 to 60.67 | 33 | 13.75 |
| 3 | Moderate | 60.68 to 70.15 | 76 | 31.67 |
| 4 | High | 70.16 to 75.40 | 59 | 24.58 |
| 5 | Very high | Above 75.41 | 50 | 20.83 |

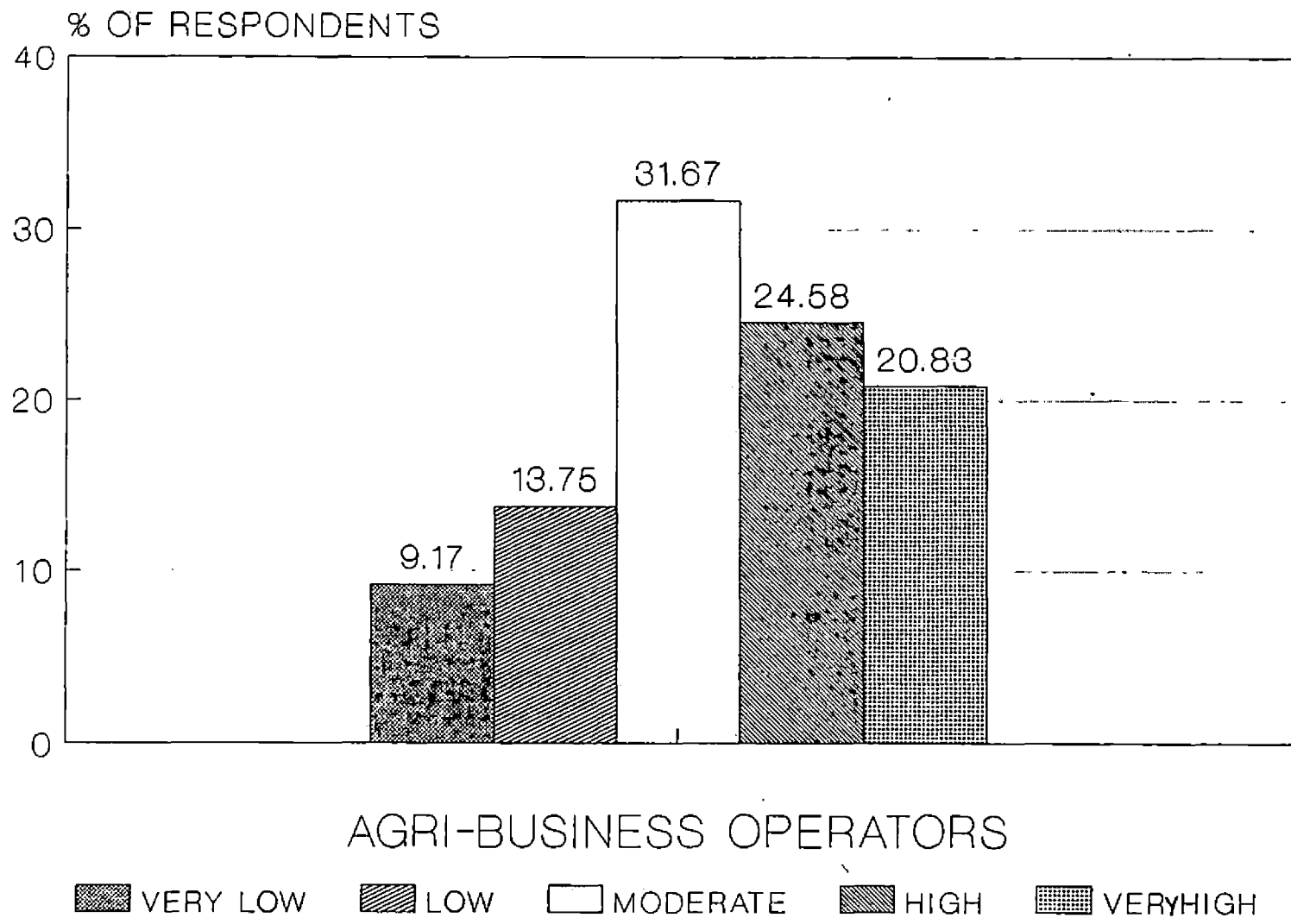


Fig.9 Distribution of ABOs according to their agri-business performance

Table 9 (Fig.9) indicates that majority (45.41%) of the agri-business operators had high to very high agri-business performance. Only 22.92 per cent of the agri-business operators had low to very low performance level.

Further analyses were carried out to obtain the variations in the levels of performance among the subcategories of agri-business operators i.e., commercial farmers, on-farm agri-business operators and off-farm agri-business operators (Tables 10, 11 and 12).

Table 10. Distribution of commercial farmers with respect to ABP

n = 120

| Sl.No. | Category | Class interval | f | Percentage |
|--------|-----------|----------------|----|------------|
| 1 | Very low | Below 60.03 | 18 | 15.00 |
| 2 | Low | 60.04 to 66.02 | 26 | 21.67 |
| 3 | Moderate | 66.03 to 70.41 | 21 | 17.50 |
| 4 | High | 70.42 to 76.16 | 30 | 25.00 |
| 5 | Very high | Above 76.17 | 25 | 20.83 |

Table 11. Distribution of on-farm agri-business operators with respect to ABP

n = 60

| Sl.No. | Category | Class interval | f | Percentage |
|--------|-----------|----------------|----|------------|
| 1 | Very low | Below 55.65 | 8 | 13.33 |
| 2 | Low | 55.66 to 63.17 | 15 | 25.00 |
| 3 | Moderate | 63.18 to 67.82 | 12 | 20.00 |
| 4 | High | 67.83 to 75.42 | 12 | 20.00 |
| 5 | Very high | Above 75.43 | 13 | 21.67 |

Table 12. Distribution of off-farm agri-business operators with respect to ABP

n = 60

| Sl.No. | Category | Class interval | f | Percentage |
|--------|-----------|----------------|----|------------|
| 1 | Very low | Below 55.35 | 9 | 15.00 |
| 2 | Low | 55.36 to 65.20 | 12 | 20.00 |
| 3 | Moderate | 65.21 to 71.51 | 10 | 16.67 |
| 4 | High | 71.52 to 75.37 | 16 | 26.66 |
| 5 | Very high | Above 75.38 | 13 | 21.67 |

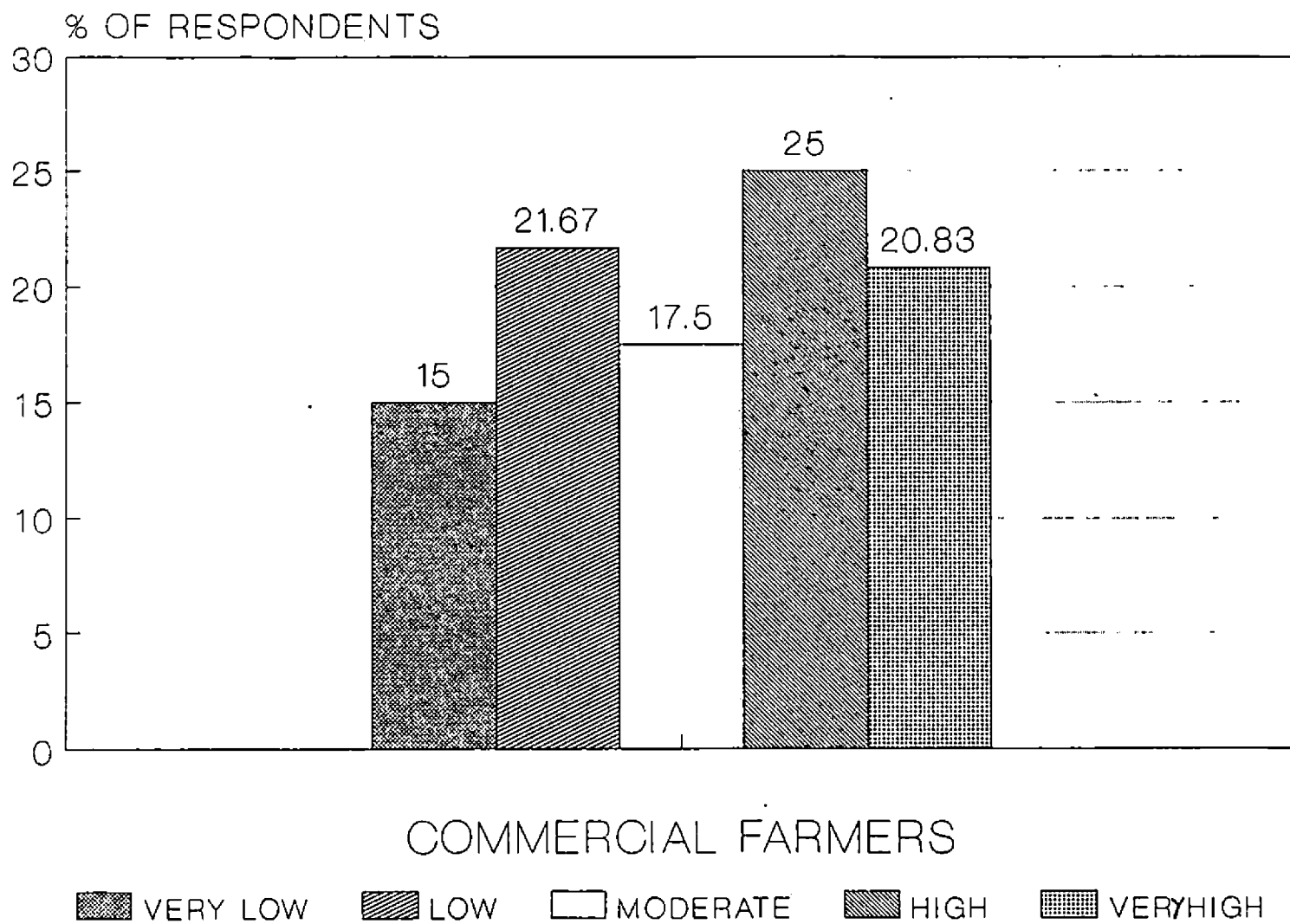
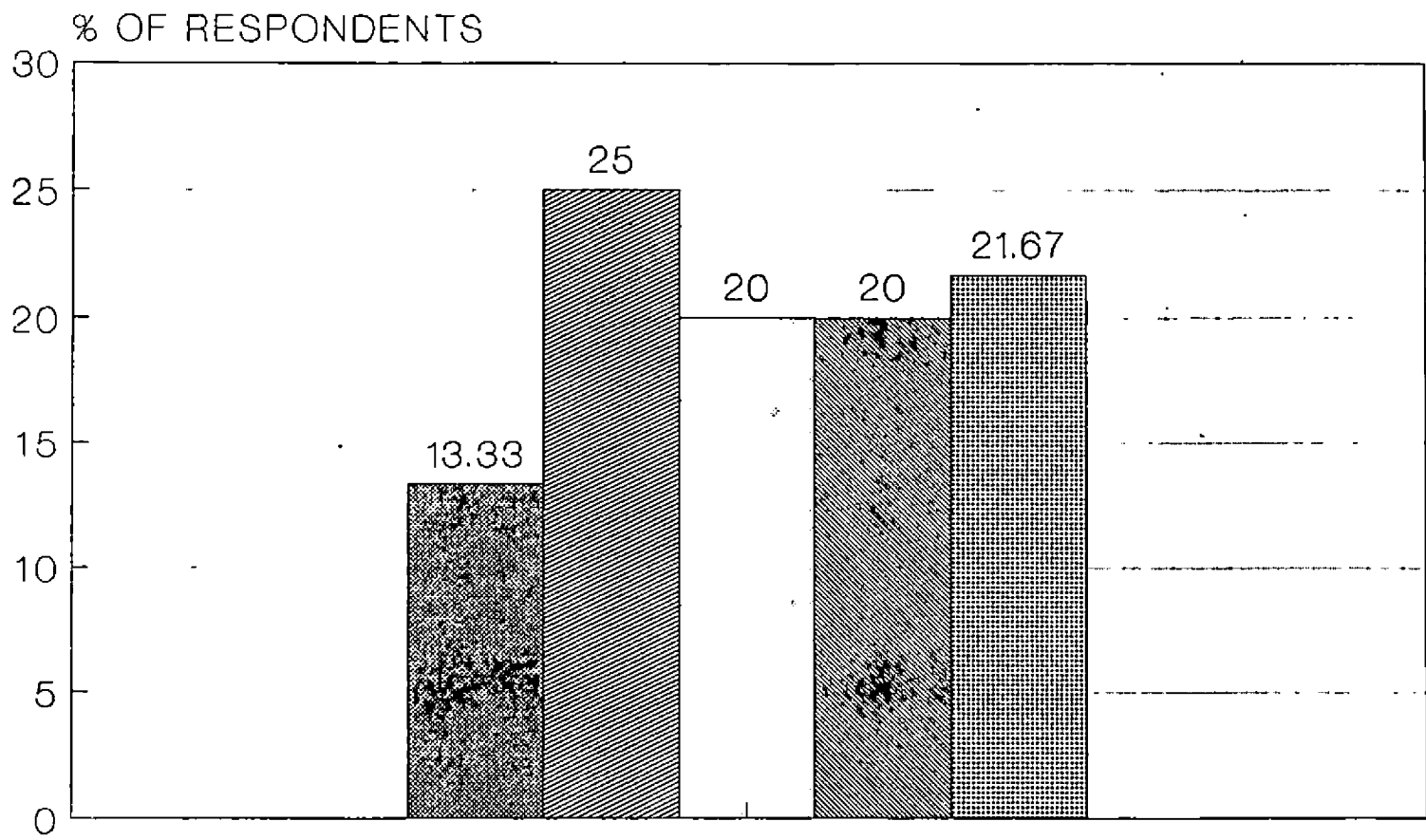


Fig.10 Distribution of Commercial farmers according to their agri-business performance



ON FARM AGRI-BUSINESS OPERATORS

VERY LOW

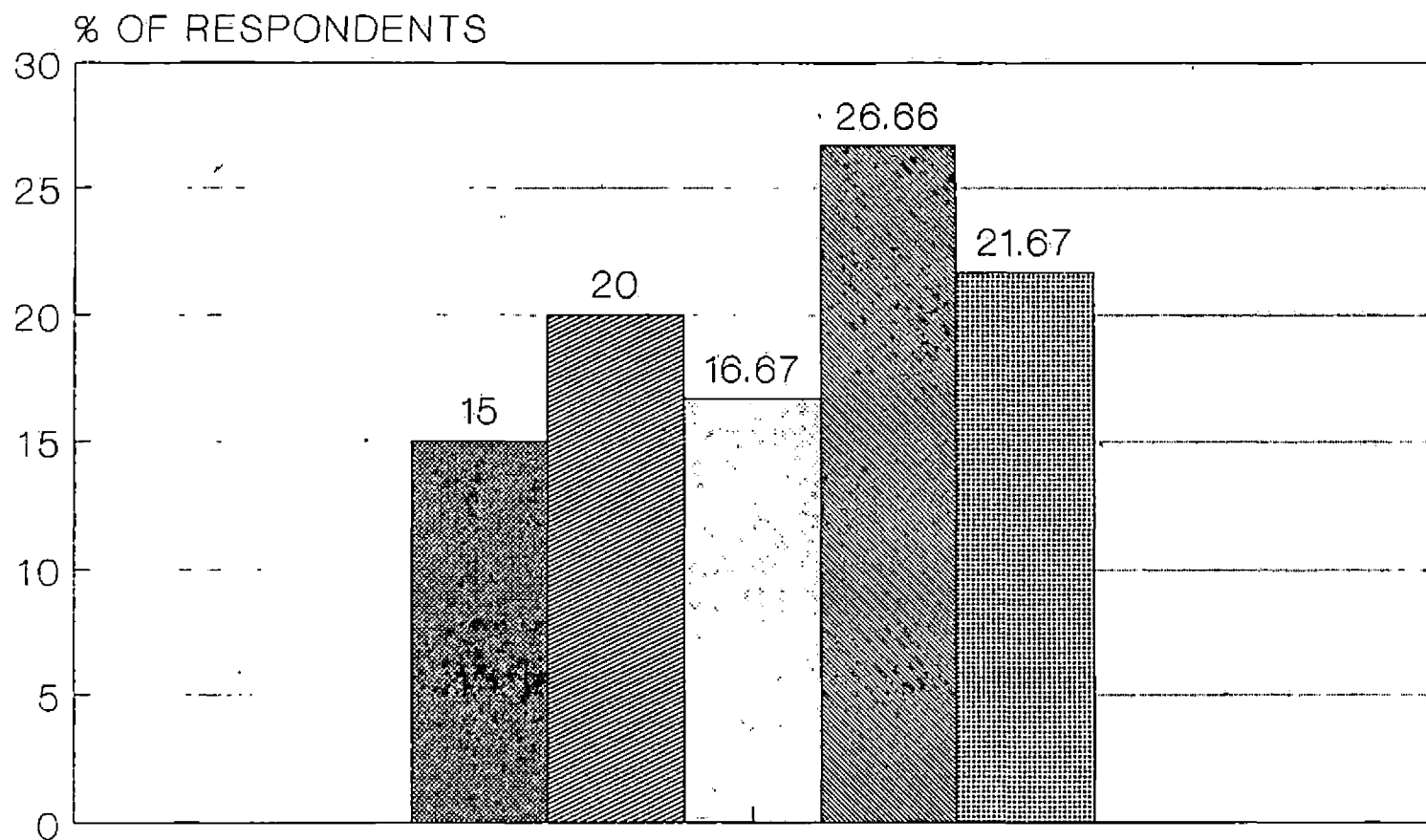
 LOW

 MODERATE

 HIGH

 VERY HIGH

Fig.11 Distribution of On-farm ABOs according to their agri-business performance



OFF FARM AGRIBUSINESS OPERATORS

VERY LOW

 LOW

 MODERATE

 HIGH

 VERYHIGH

Fig.12 Distribution of Off-farm ABOs according to their agri-business performance

A perusal of the three tables (Tables 10, 11 and 12 and Fig.10, 11 & 12) would lead one to infer a comparatively high performance in the case of the majority of agri-business operators. All the categories viz., the commercial farmers, on-farm agri-business operators and off-farm agri-business operators exhibited almost similar distribution i.e., 63.33 per cent, 61.67 per cent and 65.00 per cent of each category had moderate to very high performance.

The comparison of the commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their ABP are epitomised in Table 13 (Fig.13).

Table 13. Comparison of commercial farmers, on-farm agri-business operators and off-farm agri-business operators with respect to their ABP (n=240)

| Source | df | MS | 'F' value |
|-----------------|-----|--------|--------------------|
| Between classes | 2 | 103.91 | 1.40 ^{NS} |
| Within classes | 237 | 74.21 | |

NS - Non-significant

As seen from Table 13, the 'F' value computed indicated that there was no significant difference among the three categories of the agri-business operators with respect to their ABP. This is quite substantive of the observations in Tables 10, 11 and 12. This observation leads to the acceptance of the null hypothesis that there is no difference among the three categories of entrepreneurs with regard to ABP.

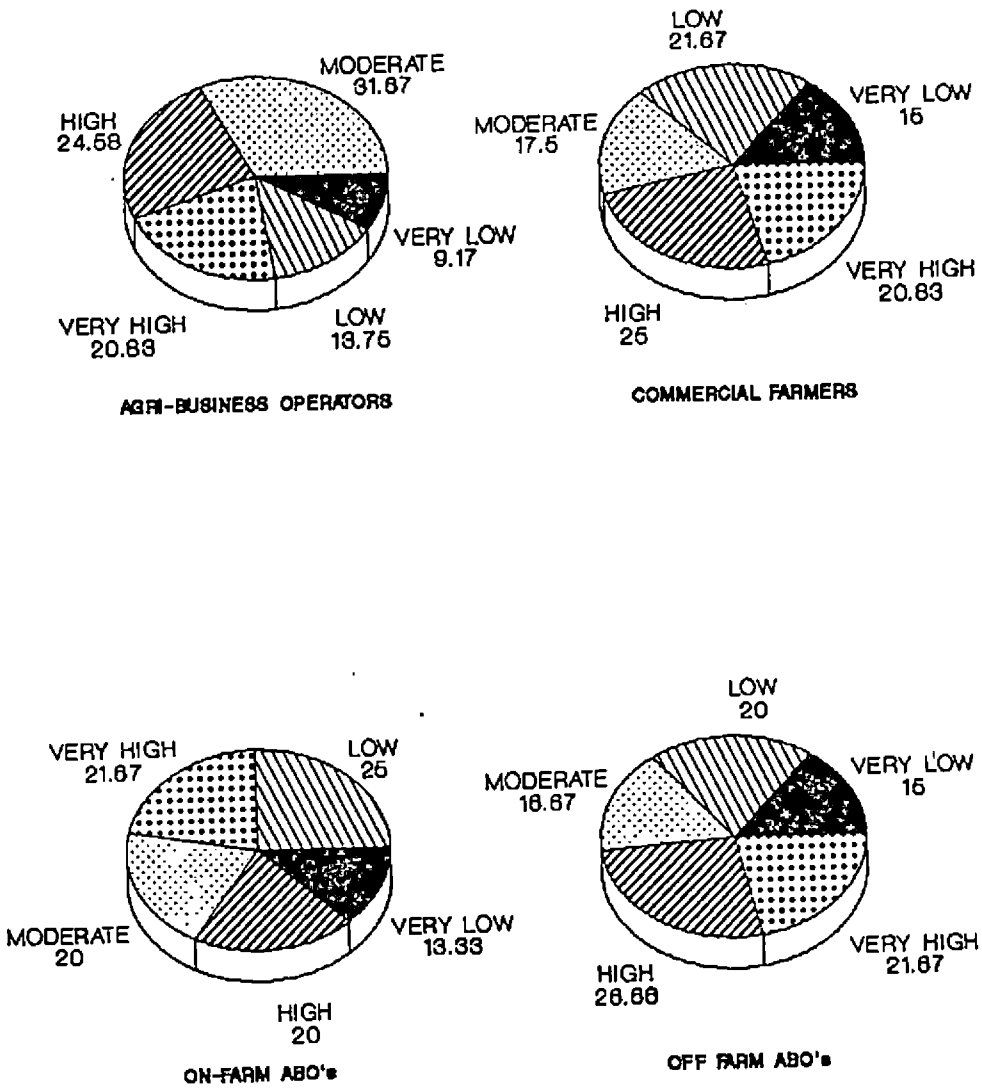


FIG.13 COMPARISON OF THE DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR AGRI-BUSINESS PERFORMANCE

This is quite comprehensible as both the endogenous and exogenous factors of the agricultural production system would be exerting their influence almost similarly on these business units.

4.3.2 Indicators of agri-business performance

The basic objective of any business is to earn a satisfactory return. The crucial indicator of performance of an entrepreneur has been reported differently by different authors. For instance, profitability (Padmanabhan, 1990), diversification (Basu and Moulik, 1979), capacity utilisation (Awasthi, 1992), perceived profitability (Singh, 1992), size of employment (Kumar, 1995) and the development of society (Sharma, 1975) are some of the indicators of performance as reported by some researchers.

In this study, the major parameters considered as indicators of ABP were capacity utilisation, cost-benefit ratio, hired labour, perceived profitability of the enterprise, labour relationship, extent of diversification and social contribution by the enterprise. The profile of the agri-business operators in relation to the selected indicators of ABP are presented in Table 14.

4.3.2.1 Capacity utilisation

Capacity utilisation in an enterprise is an important factor which decides the efficiency of an enterprise. Higher the availability of resources and the efficiency of the enterprise, higher may be the capacity utilisation which reflects on profit maximisation. Therefore, capacity utilisation may be conceived as a fair indicator of ABP. It is obvious that merely having higher production capacity is of no use, unless there is fullest utilisation of the installed capacity.

Table 14. Profile of ABOs in relation to indicators of agri-business performance
(in percentage)

| Indicators | ABOs (n=240) | Category of ABOs | | |
|------------------------------------|-----------------|------------------|---------------------------|----------------------------|
| | | CF (n=120) | On-farm ABOs (n=60) | Off-farm ABOs (n=60) |
| 1 | 2 | 3 | 4 | 5 |
| I. Capacity utilisation | | | | |
| 0-25% (1) | 0.42 | - | - | 1.67 |
| 26-50% (2) | 0.42 | - | - | 1.67 |
| 51-75% (3) | 18.33 | 13.33 | 16.67 | 30.00 |
| 76-100% (4) | 80.83 | 86.67 | 83.33 | 66.66 |
| II. Hired labour | | | | |
| < 557 mandays (1) | 61.67 | 83.33 | 63.34 | 16.67 |
| 558-1399 mandays (2) | 20.00 | 14.17 | 23.33 | 28.33 |
| >1400 mandays (3) | 18.33 | 2.50 | 13.33 | 55.00 |
| III. Cost-Benefit ratio | | | | |
| Very low < 1.00 (1) | 29.17 | 0.83 | 26.67 | 88.33 |
| Low 1.01-1.51 (2) | 28.75 | 18.33 | 68.33 | 10.00 |
| Moderate 1.52-2.24 (3) | 19.58 | 37.50 | 3.33 | - |
| High 2.25-3.04 (4) | 13.75 | 26.67 | 1.67 | - |
| Very high >3.05 (5) | 8.75 | 16.67 | - | 1.67 |
| IV. Perceived profitability | | | | |
| Very much on loss (1) | 1.66 | 0.83 | 5.00 | - |
| Somewhat on loss (2) | 5.42 | 2.50 | 10.00 | 6.67 |
| Somewhat profitable (3) | 30.42 | 35.00 | 23.33 | 28.33 |
| Profitable (4) | 30.42 | 31.67 | 26.67 | 31.67 |
| Highly profitable (5) | 32.08 | 30.00 | 35.00 | 33.33 |

Contd.

Table 14. Continued

| | 1 | 2 | 3 | 4 | 5 |
|---|---|-------|-------|-------|-------|
| V. Labour relationship | | | | | |
| Very much strained (1) | | 17.08 | 25.00 | 3.33 | 15.00 |
| Less strained (2) | | 0.83 | 1.67 | - | - |
| Somewhat smooth (3) | | 21.67 | 15.00 | 26.67 | 30.00 |
| Smooth (4) | | 40.83 | 55.83 | 18.33 | 33.33 |
| Very much smooth (5) | | 19.58 | 2.50 | 51.67 | 21.67 |
| VI. Extent of diversification | | | | | |
| Nil (0) | | 12.50 | 15.00 | 8.33 | 11.67 |
| Low (1) | | 47.91 | 44.16 | 46.67 | 56.67 |
| Medium (2) | | 30.42 | 31.67 | 30.00 | 28.33 |
| High (3) | | 9.17 | 9.17 | 15.00 | 3.33 |
| VII. Social contribution from enterprise | | | | | |
| Low level (3) | | 12.50 | - | 50.00 | - |
| Medium level (4) | | 37.50 | 25.00 | 50.00 | 50.00 |
| High level (5) | | 50.00 | 75.00 | - | 50.00 |

Note: Figures in parentheses indicates scores to the responses

ABOs - Agri-business operators

CF - Commercial farmers

It is observed from Table 14 that more than 80 per cent of the agri-business operators utilised their capacity to a large extent (from 76 to 100 per cent). It could also be seen that majority of all the three categories of respondents utilised their capacity from 76 to 100 per cent.

4.3.2.2 Hired labour

Another important measure of ABP is the number of labour hired for the enterprise. According to Kumar (1995), improvement in the quality, quantity and the performance of the labour employed in a unit is an index of business performance of that unit. He further added that uninterrupted and expanding production activity by and large depends on the quality of work force and its optimum utilisation.

It could be seen from Table 14 that more than 60 per cent of the cases agri-business units had generated only less than 557 labour mandays. The indepth analysis of three categories of agri-business units showed that majority of commercial farms and on-farm agri-business units generated less than 557 labour mandays, whereas off-farm agri-business units had generated more than 1400 mandays of labour.

4.3.2.3 Cost-Benefit ratio

The ultimate aim of an enterprise is to make profit and the entire business plans and programmes are devised keeping in view the profit they are likley to generate. Without profit, nothing can function or prosper. The profit of any system will be worked out based on cost-benefit analysis.

Table 14 highlights that more than 77 per cent of agri-business units were in the range of very low to moderate Cost-Benefit ratio. This was almost same in the Cost-Benefit ratio analysis of on-farm and off-farm agri-business units, whereas 80 per cent of commercial farms had moderate to very high Cost-Benefit ratio.

4.3.2.4 Perceived profitability

'The world is as you perceive it' is an old saying. Further, importance of perceived profitability is supported by 'Expectancy theory' proposed by Robbins (1993). The theory holds that the extent to which an individual exerts depends on his or her perception of effective performance, performance reward, and reward goal satisfaction linkages. If the individuals are not having positive orientation towards perceived profitability of the enterprise, their effort will not lead to higher business performance.

It is observed from Table 14 that more than 90 per cent of the agri-business operators had perceived their enterprises as somewhat profitable, profitable or highly profitable. The analysis of three categories of agri-business operators revealed that a high proportion of commercial farmers (96.67%), on-farm agri-business operators (85%) and off-farm agri-business operators (93.33%) had perceived their enterprises as somewhat profitable to highly profitable.

4.3.2.5 Labour relationship

Yet another indicator considered important in measuring ABP was entrepreneur's relationship with labour. Cordial relationship between labour and entrepreneur and successful business go hand-in-hand. A very smooth relationship only can result in high production and good quality of the produce.

It could be perused from the Table 14 that more than 80 per cent of the agri-business operators had either somewhat smooth or very much smooth relationship with labour. The analysis of three categories of agri-business operators also revealed that a high proportion of commercial farmers (73%), on-farm agri-business operators (96%), and off-farm agri-business operators (85%) had somewhat smooth to very much smooth relationship with labour.

4.3.2.6 Extent of diversification

According to Downey and Erickson (1987), diversification is the technique of adding other lines of business that pose different risks and opportunities so that the likelihood of a loss in one area will be offset by the possibility of gain in another. An agri-business operator, having good performance will be more interested in diversification related to his enterprise. Hence an attempt is made to find out the extent of diversification by the respondents.

It could be seen from Table 14 that more than one-third of the agri-business operators had low level of diversification related to their enterprise. It could also be seen that a higher proportion of all the three categories of respondents (44.16%, 46.47% & 56.67%) had low level of diversification.

4.3.2.7 Social contribution by the enterprise

Social contributions from the enterprise is an important aspect in the measurement of ABP. In view of the heterogeneous nature of social contributions of the different enterprises, the importance of each enterprise has been analysed.

The result revealed that (Table 14) majority of the agri-business units (87%) had four or five important items of contributions to the society. This result

was of more or less same pattern in the case of commercial farmers and off-farm agri-business units, whereas on-farm agri-business units had only 3 or 4 items of contribution to the society.

4.4 Relationship between entrepreneurial behaviour of agri-business operators and their agri-business performance

one of the specific objectives of the present study was to relate the entrepreneurial behaviour of the ABOs with their agri-business performance.

Simple correlation analysis was carried out to relate the EBI of the agri-business operators with their ABP scores. The analysis yielded a correlation coefficient value of 0.53 which was significant at 1 per cent level of significance. Singh (1992) also had similar relationship between entrepreneurial performance of women entrepreneurs and entrepreneurial profit from manufacturing, trading and servicing type of enterprises.

The relationship between EB and ABP is quite obvious and self explanatory. It is quite meaningful as the increased entrepreneurial qualities of agri-business operators will result in high ABP. In other words, poor business performance may result from an inadequate or low level of entrepreneurial traits such as innovation proneness, decision making ability, achievement motivation, risk orientation, economic motivation, entrepreneurial knowledge, management orientation, personal efficacy, level of aspiration and leadership ability. This is in line with the results of Singh (1992) where a positive relationship between entrepreneurial traits (decision making, problem solving, managerial ability, risk preference, innovativeness, entrepreneurial motivation and high aspiration) and entrepreneurial performance in the case of women entrepreneurs was observed. Rao (1966) also had stated that evaluating the growth of the enterprise is not

altogether different from evaluating the entrepreneurial performance implying that the enterprise and the entrepreneur are not two different entities. McClelland (1961) and Shah (1985) also observed a strong relationship between performance and motivation of the entrepreneurs.

The hypothesis that there will be no significant relationship between EB and ABP was rejected considering the above outcome.

4.5 Socio-economic and personal profile of the agri-business operators

A close observation of the sample profile presented in Appendix IX indicated that the sample was more or less following an even distribution in the case of education and self concept. Further it could be seen from the data in the Appendix that higher percentage (more than 80%) of respondents was observed to have subsidiary occupations. It was also seen that more than one-third of the respondents belonged to the high category in the case of age, economic status, scientific orientation, self concept and credit orientation.

The results also showed that more than one-third of the respondents were in low category as far as age, monthly income, vocational diversification, self concept, credit orientation, training experience and media utilisation were concerned.

It was evident that more than one-third of the respondents were found clustered in medium category in the case of education, economic status, scientific orientation, deferred gratification, self confidence, closeness with support system, orientation towards competition, rational orientation and self reliance.

The sample revealed that majority of the respondents (above 60%) were aged above 31 at the start of their business. Regarding family background, maximum number of respondents (42.50%) were found to have nuclear families.

4.6 Influence of behavioural and situational characteristics of agri-business operators on entrepreneurial behaviour

The relationship between the entrepreneurial behaviour and behavioural and situational characteristics of agri-business operators are presented under the following sub heads.

4.6.1 Simple correlation analysis

Table 15 (Fig.14) indicates that out of the 19 independent variables included in the study, 12 variables had significant positive relation with the EB of agri-business operators. They were education, monthly income, economic status, scientific orientation, self confidence, self concept, closeness with support system, orientation towards competition, credit orientation, rational orientation, self-reliance and media utilisation.

4.6.2 Multiple linear regression analysis

The results of multiple linear regression between EB with characteristics of the agri-business operators are presented in Table 16.

The coefficient of determination worked out was 0.719 with significant F value (29.68) which revealed that over 71 per cent of the variation in entrepreneurial behaviour of agri-business operators could be explained by the 19 variables taken together.

Table 15. Simple correlation analysis of entrepreneurial behaviour with behavioural and situational characteristics of the agri-business operators

(n = 240)

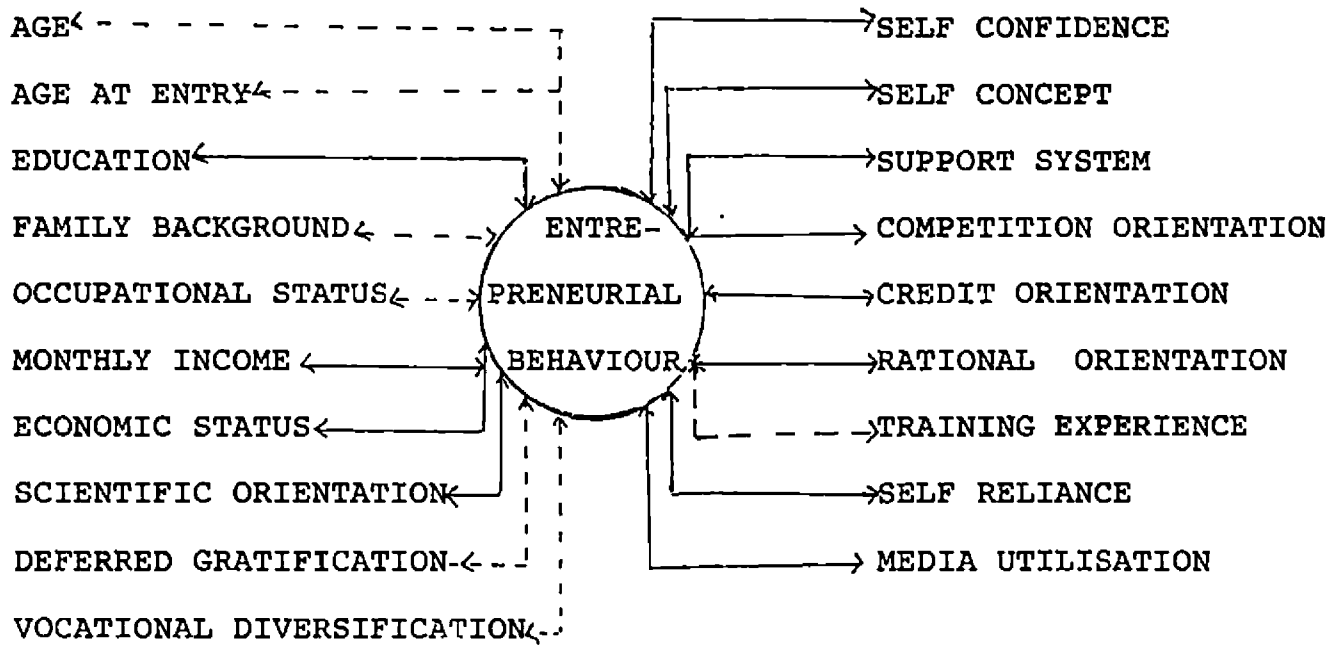
| Characteristics | Correlation coefficient (r) |
|---|-----------------------------|
| X ₁ Age | -0.0082 ^{NS} |
| X ₂ Age at entry | -0.1287 ^{NS} |
| X ₃ Education | 0.2553** |
| X ₄ Monthly income | 0.3337** |
| X ₅ Family background | 0.1125 ^{NS} |
| X ₆ Occupational status | -0.0294 ^{NS} |
| X ₇ Economic status | 0.3032** |
| X ₈ Scientific orientation | 0.6684** |
| X ₉ Deferred gratification | 0.1933 ^{NS} |
| X ₁₀ Vocational diversification | 0.0316 ^{NS} |
| X ₁₁ Self confidence | 0.6738** |
| X ₁₂ Self concept | 0.6623** |
| X ₁₃ Closeness with support system | 0.4262** |
| X ₁₄ Orientation towards competition | 0.4809** |
| X ₁₅ Credit orientation | 0.3607** |
| X ₁₆ Rational orientation | 0.6361** |
| X ₁₇ Training experience | 0.0579 ^{NS} |
| X ₁₈ Self-reliance | 0.4413** |
| X ₁₉ Media utilisation | 0.5157** |

** - Significant at 1% level

NS - Non-significant

BEHAVIOURAL AND SITUATIONAL VARIABLES

BEHAVIOURAL AND SITUATIONAL VARIABLES



←—→ Significant

←---→ Non-Significant

Fig.14. Diagrammatic representation of the observed relationships between the entrepreneurial behaviour of ABO's and their behavioural characteristics

Table 16. Multiple linear regression of entrepreneurial behaviour with behavioural and situational characteristics of the agri-business operators

(n = 240)

| Characteristics | | Regression coefficient (b) | Standard error of (b) | t' value |
|------------------------|---------------------------------|------------------------------|-----------------------|----------------------|
| X ₁ | Age | 0.23386 | 0.06378 | 3.666** |
| X ₂ | Age at entry | -0.28280 | 0.06482 | -4.362** |
| X ₃ | Education | 0.10417 | 0.82417 | 0.126 ^{NS} |
| X ₄ | Monthly income | 0.00006 | 0.00005 | 1.331 ^{NS} |
| X ₅ | Family background | 0.92747 | 1.0407 | 0.891 ^{NS} |
| X ₆ | Occupational status | 1.3038 | 2.5176 | 0.518 ^{NS} |
| X ₇ | Economic status | -0.22624 | 0.26127 | -0.866 ^{NS} |
| X ₈ | Scientific orientation | 1.3534 | 0.23540 | 5.749** |
| X ₉ | Deferred gratification | -0.04672 | 0.38450 | -0.122 ^{NS} |
| X ₁₀ | Vocational diversification | 1.4466 | 1.4119 | 1.025 ^{NS} |
| X ₁₁ | Self confidence | 1.8290 | 0.49943 | 3.662** |
| X ₁₂ | Self concept | 0.69203 | 0.28261 | 2.449* |
| X ₁₃ | Closeness with support system | -0.01777 | 0.17926 | -0.099 ^{NS} |
| X ₁₄ | Orientation towards competition | 0.97757 | 0.35096 | 2.785** |
| X ₁₅ | Credit orientation | 0.79864 | 0.53840 | 1.483 ^{NS} |
| X ₁₆ | Rational orientation | 2.7360 | 1.4656 | 1.867 ^{NS} |
| X ₁₇ | Training experience | 0.04468 | 0.08824 | 0.50 |
| X ₁₈ | Self-reliance | 2.0826 | 1.0849 | 1.920 ^{NS} |
| X ₁₉ | Media utilisation | 0.57592 | 0.24105 | 2.389* |
| Intercept = -52.22 | | ** - Significant at 1% level | | |
| R ² = 0.719 | | * - Significant at 5% level | | |
| F = 29.68 | | NS - Non-significant | | |

It could be noticed that out of the 19 variables, seven variables were significantly related with \bar{EB} . They were age, age at entry, scientific orientation, self confidence, self concept, orientation towards competition and media utilisation. The multiple regression equation fitted predicting the entrepreneurial behaviour was:

$$Y = -52.22 + 0.233x_1 - 0.283x_2 + 0.104x_3 - 0.000x_4 + 0.927x_5 + 1.304x_6 - 0.226x_7 + 1.353x_8 - 0.049x_9 + 1.447x_{10} + 1.829x_{11} + 0.692x_{12} - 0.017x_{13} + 0.978x_{14} + 0.799x_{15} + 2.736x_{16} + 0.045x_{17} + 2.083x_{18} + 0.576x_{19}$$

From the above prediction equation it could be inferred that an increase in age would lead to an increase in EBI by 0.233 units, other factors being constant. Similarly, a unit increase in scientific orientation, self confidence, self concept, orientation towards competition and media utilisation would lead to an increase in the EBI by 1.353, 1.829, 0.692, 0.978 and 0.576 units respectively. While positive changes in the above variables would lead to increase in EBI, the delay in age at entry after seeking their livelihood would lead to a decrease in EBI by 0.283 units.

4.6.3 Step down regression analysis

Though the multiple linear regression analysis revealed the joint influence of all the independent variables on entrepreneurial behaviour, it was considered better to have a simpler model in which there are lesser number of predictors in explaining the relationship. Hence to obtain the joint influence of the best set of predictors of entrepreneurial behaviour, step down regression analysis was done.

Table 17. Step-down regression analysis of entrepreneurial behaviour with behavioural and situational characteristics of agri-business operators

(n = 240)

| Step No. | Variables for regression | Multiple correlation coefficient (R) | R ² | 'F' value |
|----------|-------------------------------------|--------------------------------------|----------------|-----------|
| I | All the variables included | 0.8482 | 0.7194 | 29.68** |
| II | Variables excluding X ₁₃ | 0.8482 | 0.7194 | 31.47** |
| III | Variables excluding X ₉ | 0.8481 | 0.7193 | 33.47** |
| IV | Variables excluding X ₃ | 0.8481 | 0.7193 | 35.72** |
| V | Variables excluding X ₁₇ | 0.8480 | 0.7191 | 38.22** |
| VI | Variables excluding X ₆ | 0.8478 | 0.7188 | 41.07** |
| VII | Variables excluding X ₇ | 0.8471 | 0.7176 | 44.18** |
| VIII | Variables excluding X ₅ | 0.8464 | 0.7164 | 47.78** |
| IX | Variables excluding X ₄ | 0.8454 | 0.7147 | 51.91** |
| X | Variables excluding X ₁₅ | 0.8435 | 0.7115 | 56.46** |

(Remaining variables included X₁, X₂, X₈, X₁₀, X₁₁, X₁₂, X₁₄, X₁₆, X₁₈, X₁₉)

** Significant at 1% level

| | | | |
|-----------------|------------------------------|-----------------|-----------------------------------|
| X ₁ | - Age | X ₁₁ | - Self confidence |
| X ₂ | - Age at entry | X ₁₂ | - Self concept |
| X ₃ | - Education | X ₁₃ | - Closeness with support system |
| X ₄ | - Monthly income | X ₁₄ | - Orientation towards competition |
| X ₅ | - Family background | X ₁₅ | - Credit orientation |
| X ₆ | - Occupational status | X ₁₆ | - Rational orientation |
| X ₇ | - Economic status | X ₁₇ | - Training experience |
| X ₈ | - Scientific orientation | X ₁₈ | - Self-reliance |
| X ₉ | - Deferred gratification | X ₁₉ | - Media utilisation |
| X ₁₀ | - Vocational diversification | | |

The results of the step-down regression analysis on entrepreneurial behaviour of agri-business operators with the selected independent variables are presented in Table 17.

It could be seen that in the final step with ten variables included more than 71 per cent of the variation in the entrepreneurial behaviour could be explained. Thus, more than 71 per cent of the total variation could be explained by these ten variables together i.e., age, age at entry, scientific orientation, vocational diversification, self confidence, self concept, orientation towards competition, rational orientation, self-reliance and media utilisation.

The discussion on the salient results are presented.

1. Age and Age at entry

The results of the study revealed that age and age at entry into the business were found to influence the entrepreneurial behaviour of agri-business operators.

The age of the entrepreneur and his age at the time of entry into business, reflect the level of entrepreneurial behaviour and also his interest and involvement in enterprise. The influence of these two variables reflect the increase in entrepreneurial behaviour corresponding with increase in age, which may be attributed to the gain in experience and practical knowledge and wisdom over a period of time. The finding is supported by Kumar (1995).

The findings of LaDue *et al.* (1991) also revealed that age was consistently a significant indicator of the farmer's investment decisions. This result was consistent with the life cycle of farm operators and economics of size. They

reported that farms making no investment were most likely be either small farms or those operated by older farmers. Large farm business and those operated by younger operators were more likely to expand.

On the basis of common sence and the observed tendency as reported by various researcher, the present finding is quite justifiable.

2. Scientific orientation

An agri-business operator with good scientific orientation will eschew the old, traditional practices to adopt improved technology. In this attempt an entrepreneur is likely to come into contact with more information sources. Scientific orientation makes one more progressive and drives him to participate in more extension programmes for gaining latest knowledge which inturn motivate him to be more entrepreneurial.

The findings of Gowda (1978) confirm the present results, which had related the level of scientific orientation and the entrepreneurial behavioural characteristics of extension clientele.

3. Vocational diversification

The results reinforce the importance of vocational diversification in relation to entrepreneurial behaviour among agri-business operators. The vocational diversification serves as an indirect shock absorber for managing possible risks in the agri-business venture. This is in agreement with the findings of Damodaran (1994) in the study on risk management behaviour of banana growers. McClelland and Winter (1969) had clearly indicated that the entrepreneurial training could result in the establishment of new industry, expansion of existing industry, development of

manpower and creation of more and new job opportunities for others. The result obtained thus probably could be substantiated based on these facts.

4. Self confidence

Self confidence, enables the agri-business operators to critically review their own strengths, abilities, and resourcefulness to perform an activity which they desire to undertake. This could be supported by the 'theory of self fulfilling prophecy' put forth by Devito (1985), according to which a person who is optimistic in his life and confident about his future, will be striving for better performance in his life. This attitude will be reflected in all his activities.

This finding agrees with the results reported by Loganathan (1988) and Naik *et al.* (1990).

5. Self concept

According to Venkatapathy (1986), self concept makes one, more energetic, enthusiastic, hard working, independent, persistent and skillful. The agri-business operators with high perception about the self will be in a position and in a mental frame to do something on their own and to climb up in the ladder of entrepreneurial success. The finding of this study is supported by 'self concept theory' proposed by Rogers (1961), which explains that a strong positive self concept is the goal of human beings.

6. Orientation towards competition

Entrepreneurs with high competition orientation normally desire extinsic concommitants, not much for their material value, but for their symbolic value

namely, prestige, power and self-esteem for demonstrating their success. Though, material value of making profit is the primary yard stick for the entrepreneurs, the symbolic values provide a sense of satisfaction and encouragement to the entrepreneurs. The agri-business operators who really aim to attain the symbolic values will necessarily have competition orientation.

The present finding is closely related with the exchange theory of Homan's (1961) which refers to the process of evoking behaviour by means of some sort of 'reward' provided for appropriate behaviour.

Gregg (1985) and Naik *et al.* (1990) also had obtained similar results regarding competition in relation to entrepreneurial development.

7. Rational orientation

Rational orientation of an entrepreneur is a sine-quo-non if he has to succeed in taking up and managing an enterprise. An entrepreneur with high rationality will be always analysing the reasons for his improvement or otherwise in business enterprise. From his own past experience, a rational entrepreneur who has obtained good business performance as a result of high entrepreneurial behaviour will be quite convinced about the benefits of scientific advances and this behaviour is likely to be reinforced and repeated by that entrepreneur. This derives support from the law of result or achievement in the learning process.

8. Self-reliance

High self-reliance could be attributed to a staunch entrepreneurship quality. This is in line with the finding that successful entrepreneurs have high level of self-confidence. They tend to believe strongly in themselves and their abilities to

achieve goals they set. They also believe that events in their lives are mainly self-determined, that they have a major influence on their personal destinies and have little belief in fate. The study thus reaffirms the necessity of self-reliance for a prospective entrepreneur.

Similar finding was reported by Porchezian (1991) in the case of farmer-entrepreneurs.

9. Media utilisation

Media utilisation emerged as an important attribute in determining the entrepreneurial behaviour. The result indicated that an agri-business operator utilising more of mass media sources would normally imbibe more entrepreneurial behavioural qualities which is quite obvious.

The finding of Raghavacharyulu (1983) is worth to be mention here which could be further analysed, with the help of 'information threshold theory' proposed by Gaikwad (1968). The higher exposure of an individual to different information sources may enable him to compare the various technologies and select and utilise the most rational and appropriate technologies suited to him.

4.7 Constraints perceived by the respondents with reference to entrepreneurial behaviour

4.7.1 Constraints perceived by the agri-business operators with reference to entrepreneurial behaviour

The constraints perceived by the entrepreneurs which had hindered the development of their enterprise units and thus considered as obstacles to fostering entrepreneurship are presented in Table 18.

A perusal of Table 18 enables one to detail the gravity of the problems and constraints the agri-business operators face in the enterprises. The high frequencies obtained for all the constraints is a reflection of the intensity of the factors of the enterprises which are affected by the vagaries and fluctuations in the environment. It is very much clear from the Table that the most crucial factor which very much constrains is the source of finance followed by marketing and availability of raw materials.

Table 18. Constraints perceived by the agri-business operators

(n=240)

| Sl.No. | Constraints | Observed score | Rank |
|--------|-------------------------------------|----------------|------|
| 1 | Raw materials | 1815 | III |
| 2 | Marketing | 2763 | II |
| 3 | Electricity/power | 1524 | VI |
| 4 | Labour | 1788 | IV |
| 5 | Finance | 3364 | I |
| 6 | Technical and Managerial assistance | 1759 | V |

4.7.2 Constraints perceived by the three categories of agri-business operators with reference to entrepreneurial behaviour

The problems encountered by the three categories of respondents viz. commercial farmers, on-farm agri-business operators and off-farm agri-business operators are presented in Table 19a and 19b.

A close look at the results presented in Table 21a reveals that not only at a general level; but for three categories separately also, the major constraints were finance and marketing.

Table 19a. Category-wise analysis of the perceived constraints based on observed frequency score

(n=240)

| Sl. No. | Constraints | Commercial farmers (n=120) | | On-farm agri-business operators (n=60) | | Off-farm agri-business operators (n=60) | |
|---------|-------------------------------------|----------------------------|------|--|------|---|------|
| | | Observed frequency | Rank | Observed frequency | Rank | Observed frequency | Rank |
| 1 | Raw material | 765 | 4 | 550 | 3 | 500 | 5.0 |
| 2 | Marketing | 1109 | 2 | 858 | 2 | 796 | 2.0 |
| 3 | Electricity/power | 553 | 6 | 495 | 5 | 476 | 6.0 |
| 4 | Labour | 891 | 3 | 396 | 6 | 501 | 3.5 |
| 5 | Finance | 1298 | 1 | 937 | 1 | 1129 | 1.0 |
| 6 | Technical and managerial assistance | 740 | 5 | 518 | 4 | 501 | 3.5 |

Table 19b. Comparison of the constraints among the three categories of the respondents based on expected frequency score

(n=240)

| Sl. No. | Constraints | Commercial farmers (n=120) | | On-farm agri-business operators (n=60) | | Off-farm agri-business operators (n=60) | |
|---------|-------------------------------------|-------------------------------|------|--|------|---|------|
| | | Expected frequency (if n=100) | Rank | Expected frequency (if n=100) | Rank | Expected frequency (if n=100) | Rank |
| 1 | Raw material | 638 | III | 917 | I | 833 | II |
| 2 | Marketing | 924 | III | 1430 | I | 1327 | II |
| 3 | Electricity/power | 461 | III | 825 | I | 793 | II |
| 4 | Labour | 743 | II | 660 | III | 835 | I |
| 5 | Finance | 1082 | III | 1562 | II | 1882 | I |
| 6 | Technical and managerial assistance | 617 | III | 863 | I | 835 | II |
| Total | | 4465 | | 6257 | | 6505 | |

Table 20. Perceived constraints ordered based on the Kendall's coefficient of concordance (w)

(n = 240)

| Sl.No. | Constraints | Rank | Obtained rank |
|--------|-------------------------------------|------|---------------|
| 1 | Finance | 3 | 1 |
| 2 | Marketing | 6 | 2 |
| 3 | Raw material | 12 | 3 |
| 4 | Labour | 12.5 | 4.5 |
| 5 | Technical and managerial assistance | 12.5 | 4.5 |
| 6 | Electricity/power | 17 | 6 |

The constraints commonly perceived by the different categories of respondents as important in affecting entrepreneurial behaviour and agri-business performance of the agri-business operators are presented in Table 20. The constraints were in the following descending order - finance (1), marketing (2), raw material availability (3), labour availability (4.5), technical and managerial assistance (4.5) and electricity/ power (6). Here, agreement among the three categories of agri-business operators in ranking the constraints is also noticeable. This finding is supported by the data in Table 8 and 13 which revealed that there was no significant difference among the three categories of respondents with respect to their entrepreneurial behaviour and agri-business performance. This indicates how, similarly the existing entrepreneurial environment and its dimensions are negatively affecting the agri-business sector in general and its sub sectors.

Table 19b depicts the comparison of the constraints among the three categories of the respondents. As varying sample sizes were taken for the groups, the expected frequencies if the samples were of uniform size i.e. 100 were worked for easier and meaningful comparison.

On analysis of the expected frequencies of the three categories it becomes evident that the commercial farm entrepreneurs are less constrained compared to the other two categories. The on-farm entrepreneurs are the most affected category with respect to raw material availability, marketing availability, electricity/power and technical and managerial assistance while the off-farm entrepreneurs are the most affected with respect to labour availability and finance. It is clear from the total expected frequencies of the three categories that the off-farm entrepreneurs are the most constrained category of agri-business operators.

As the percentage of input requirement - capital, labour and raw materials of the off-farm enterprises are substantially high compared to the commercial farm entrepreneurs and on-farm entrepreneurs, the high ranking of constraints in the case of off-farm entrepreneurs is self explained.

4.7.3 Nature of difficulties perceived by the respondents with respect to their entrepreneurial behaviour

The nature of difficulties/problems expressed in the constraints viz. raw material, marketing, power, labour, finance and technical and managerial assistance are presented in Tables 21-26.

4.7.3.1 Raw materials

Table 21 gives an overview of the problems faced under the constraints of raw materials. It is sagacious from the Table that high prices of raw material stood out as major difficulty followed by scarcity, low quality and problem of transport as expressed by the respondents.

Table 21. Problems of raw materials perceived by the agri-business operators
(n=240)

| Sl.No. | Difficulty | Observed Score | % |
|--------|----------------------|----------------|-------|
| 1 | High prices | 546 | 39.08 |
| 2 | Scarcity | 488 | 26.89 |
| 3 | Low quality | 487 | 26.83 |
| 4 | Problem of transport | 294 | 16.20 |

High cost, scarcity coupled with low quality of raw materials like hitech seeds or planting materials, bio fertilizers, pesticides, weedicides etc. were the important constraints as perceived by the agri-business operators. The high scarcity and low quality of the raw materials may be felt due to the over dependence of almost all the units on their local sources only. Further, the seasonality in the availability of raw materials also created problems as many of them are available only in certain seasons. As many of the raw materials became available in heaps during peak seasons the agri-business operators find it difficult to process, preserve or market with in limited time. Lack of infrastructure facilities for storage and preservation was raised as a major impediment - under the constraint of raw materials.

Most often crop failures also lead to these problems of raw material supply which intum increase the scarcity and high cost of raw materials. Similar observations with respect to raw materials were reported by Nadkarni (1988); Khanka (1989) and Govindappa and Halasagi (1996).

4.7.3.2 Marketing

Table 22. Marketing problems perceived by the agri-business operators
(n=240)

| Sl.No. | Difficulty | observed score | % |
|--------|---|----------------|-------|
| 1 | Seasonality of demand | 510 | 18.46 |
| 2 | Competition from small scale units | 420 | 15.20 |
| 3 | Low price for the produce | 375 | 13.57 |
| 4 | Frequent fluctuation in prices | 348 | 12.60 |
| 5 | Difficulty in establishing of domestic market | 325 | 11.76 |
| 6 | Competition from large scale units | 276 | 9.99 |
| 7 | Problems of middlemen | 210 | 7.60 |
| 8 | Problems of transport | 152 | 5.50 |
| 9 | Non-availability of foreign market | 147 | 5.32 |

Table 22 highlights the marketing problems experienced by the agri-business operators. While viewing the difficulties in marketing difficulties like seasonality of demand, competition from other small scale units, low price for the produce, frequent fluctuation in prices, problems in establishing domestic market, competition from large scale units with established brands, problems of middlemen, problems of transport and non-availability of foreign market etc. were reported as more frequently affecting the sale of the produce.

Seasonality of demand, competition from other units and low price for the produce and frequent fluctuation in prices were the major difficulties expressed by the respondents. The products of most of the studied units such as food processing and oil industries had no brand names. In this age of highly sophisticated market competition and many other tactics of incentives these small enterprises who are striving, even without a brand name find it great difficulty to sell their produce. This in turn creates seasonality of demand. The cumbersome procedures and

formalities to be met in obtaining licences and registration also create barriers in these enterprises. The finding of Venkataramaiah and Manjula (1996) can be cited here.

Competition from other small scale units was the another serious difficulty faced by the entrepreneurs. A unit making fruit pulp or oil industry using modernized machineries had to compete with small scale units which usually spend less amount as production cost. Hence the small scale units were able to sell their produce at a less price than the large scale units. Further the frequent changes in the government's policies of export and import and tax structure also resulted in fluctuations in prices of the produce.

4.7.3.3 Electricity/power

Table 23. Problems of electricity/power

(n=240)

| Sl.No. | Difficulty | observed score | % |
|--------|-------------|----------------|-------|
| 1 | Scarcity | 588 | 38.58 |
| 2 | Uncertainty | 513 | 33.66 |
| 3 | High cost | 423 | 27.76 |

Table 23 outlines the major difficulties experienced by agri-business operator in using electricity/power. It could be noticed that scarcity in power availability stood out as the major difficulty followed by uncertainty and high cost. Many of the agri-business units were consuming power for various machinery operations like processing, irrigation etc. Due to frequent power breakdowns and powercuts the production process, quantity and quality of the output etc. were adversely affected. This has resulted in shut down, unemployment, wastage of man

power and under utilization of the business capacity. Govindappa and Halasagi (1996) also had reported similar finding earlier.

4.7.3.4 Labour

Table 24. Labour problems

(n=240)

| Sl.No. | Difficulty | observed score | % |
|--------|------------------------------|----------------|-------|
| 1 | High labour cost | 435 | 24.33 |
| 2 | Labour management | 432 | 24.16 |
| 3 | Non availability/Absenteeism | 381 | 21.31 |
| 4 | Lack of skill/training | 300 | 16.78 |
| 5 | Low turnover | 240 | 13.42 |

The major difficulties related to labour as perceived by the agri-business operators were the problems of high labour cost and labour management (Table 24). Non-availability, absenteeism of the labourers, lack of skill/training and the resulted low turnover were the other major difficulties experienced by the entrepreneurs.

With the changed socio-economic scenes and strong trade unions prevalent in the state the bargaining power of the labour class are higher and the terms and conditions demanded by the labourers make the work environment very strained which inturn leads to high labour cost and management problems. Compared to other states of the country the wage rate of labourers are the highest in Kerala (Directorate of Economics and Statistics, 1993).

The non-availability of labourers in general and scarcity specially in critical periods of the enterprise are another major problems. Lack of skill and training on the part of labourers also leads to the under utilization of the business capacity and non profitability of the units. The low esteem attached to farm labour

among the educated youth of the state is one of the major reason behind this scarcity. Further this leads to the condition where the entrepreneurs are forced to show lenience in terms and conditions so as to retain them. Thus the problems of labour management as well as non-availability of labour aggravate the production problems in agri-business. This definitely posses under utilisation of business capacity which are labour demanding in general. Lack of training on management aspects of the enterprises among the agri-business operators was another major problem. It was observed that none of the agri-business operators had received labour management training from any of the entrepreneurial trainings.

4.7.3.5 Finance

Table 25. Problems of finance

(n=240)

| Sl.No. | Difficulty | Observed Score | % |
|--------|---|-------------------|-------|
| 1 | High rate of interest | 599 | 17.81 |
| 2 | Lack of financial assistance from the government agencies | 587 | 17.45 |
| 3 | Shortage of meagre initial in-hand finance for working capital | 575 | 17.09 |
| 4 | Shortage of meagre initial in-hand finance for fixed capital | 514 | 15.28 |
| 5 | Red-tapism in government agencies | 499 | 14.83 |
| 6 | Tax structure | 347 | 10.32 |
| 7 | Structure of excise duty | 243 | 7.22 |

Table 25 presents the difficulties expressed by the agri-business operators in relation to finance. High rate of interest stood out as major difficulty followed by lack of financial assistance from the government agencies, shortage of meagre initial in-hand finance for working capital and fixed capital, red-tapism in government agencies, tax structure and structure of excise duty.

The key financial problems were high rates of interest and lack of sufficient financial assistance from the government agencies. Financial help from government in the way of loans and subsidies meant exclusively for agri-business operators are very meagre. As high amount of initial investment is essential to take up off-farm and on-farm enterprises there should be more number of comprehensive entrepreneur friendly programmes as motivators. The analysis to trace the sources of capital investment for the agri-business revealed that commercial banks (32.5%), co-operative societies (24.17%), input agencies (10.83%) and Kerala Financial Corporation (8.75%) are the major sources of capital for the operators. These institution's interest rate is in the range of 12 to 18 per cent which is very much taxing on the low profit profile agri-business sector in general. Nearly 23.75 per cent of the respondents were not in the habit of utilising loans for their enterprise.

To aggravate the situation further, the procedures and formalities for availing these financial assistance are very cumbersome. Shortage of meagre initial in-hand finance as working and fixed capital also hampers the growth and diversification of agri-business units. Same kind of financial problems were reported by Singh (1992) and Kumar (1995).

4.7.3.6 Technical and managerial assistance

Table 26. Problems of technical and managerial assistance

(n=240)

| Sl.No. | Difficulty | Observed Score | % |
|--------|---|----------------|-------|
| 1 | Ineffective consultancy service provided by the government agencies | 613 | 34.85 |
| 2 | Non-availability of skilled workmen | 437 | 24.84 |
| 3 | Highly expensive consultancy service of private agencies | 360 | 20.47 |
| 4 | Non-availability of efficient managers | 349 | 19.84 |

Among the difficulties experienced related to technical and managerial assistance, in-effective consultancy services provided by the government agencies was perceived as the most important one followed by non-availability of skilled workers, highly expensive consultancy services of private agencies and non-availability of efficient managers (Table 26).

There are many agri-business promoting institutions viz. District Industries Centres, Department of Agriculture, Department of Animal Husbandry, Rubber Board, Coconut Board, Agricultural University, NGOs etc. But majority of the agri-business operators were unsatisfied with the nature and quantum of assistance provided to them. Organised technical guidance together with co-ordinated services is what they are in need of. These technical training should be enriched with management component which will directly contribute to the efficient entrepreneurship. Skill training is also a requirement among the labourers to enhance their efficiency.

4.8 Relation between constraints perceived by agri-business operators and their entrepreneurial behaviour and agri-business performance

The results of correlation analysis of the constraints perceived by the agri-business operators with their EBI and ABP are presented in Table 27.

Table 27. Simple correlation analysis of constraints of agri-business operators with their EBI and ABPI

(n=240)

| Sl.No. | Variables | Correlation coefficient (r values) |
|--------|---------------------------------|---------------------------------------|
| 1 | Entrepreneurial behaviour index | -0.2072** |
| 2 | Agri-business performance index | -0.2620** |

**Significant at 1% level of significance

A perusal of the Table 27 would indicate that both EBI and ABPI of the agri-business operators had highly significant negative correlation with their perceived constraints score.

This directly reveals that the agri-business operators with more constraints, had low EBI and low ABPI. This observation has led to the rejection of the null hypotheses that there is no significant association between (i) EBI of agri-business operators and their perception about constraints and problems in enterprise management and, (ii) ABPI of agri-business operators and their perception about constraints and problems in enterprise management. The observed major constraints/problems viz. the shortage of raw materials, labour scarcity, finance and marketing are really the critical dimensions of any enterprise. Besides these, the maze of laws and cumbersome procedures became dampening forces to the entrepreneur's zeal and zest to expand and diversify their business. As a cumulative effect, the constraints and problems hinder the development of agri-business units, their entrepreneurial behaviour and their agri-business performance and become obstacles to fostering of the entrepreneurship. Despite several measures taken to strengthen these units and the protective umbrella provided by the policies and programmes of the government, still the sector faces intimidating problems.

The shortage of raw material is a major problem. This is reflected in the under utilisation of installed capacity. Scarcity of labour and absenteeism are also major obstacles affecting efficiency of the enterprises.

Non-availability or shortage of working capital is a serious handicap for agri-business operators, which reduces their inputs purchasing capacity. Locating and establishing market for the products is critical factor for an agri-business operator which is directly reflected in his business performance. All these

sufficiently explain the negative correlation of the constraints of agri-business operators and their EBI and ABPI.

4.9 Strategies for entrepreneurship development in the agri-business sector

The inadequacy of entrepreneurship in agri-business is an inhibiting factor which retards the process of economic development in our country. Although there is no such thing as zero level of entrepreneurial climate as in industrial base, coupled with lack of access to relevant technology, has acted as a handicap hitherto. Entrepreneurship can be planned and developed and need for providing appropriate environment to promote entrepreneurship in agri-business is of vital importance.

The development of indigenous entrepreneurship is therefore a key issue and an imperative need on the part of any entrepreneurship promoting agencies. Hence it is necessary to identify individuals who have the entrepreneurial talent and inclination, motivate and train them through scientifically organised programmes for under taking risk bearing activities and for being increasingly self-reliant.

So in order to strengthen and develop the entrepreneurial spirit among agri-business operators, appropriate strategies and action plans have to be formulated. Keeping this objective and the findings of the present investigations in view, relevant suggestions are made in this section. There can be no straight jacketed approach to this issue. Therefore, a multidimensional, flexible, integrated and co-ordinated approach is recommended for the planners and implementors. An examination of the results contained in this chapter has surfaced the following major issues which need to be thoughtfully tackled for promoting entrepreneurship in the agri-business sector and resolving under-employment and unemployment problems.

This study has shown that crucial dimensions of entrepreneurial behaviour were innovation proneness, achievement motivation, risk orientation, economic motivation, management orientation and personal efficacy. The profile of agri-business operators was found to be medium to high with regard to entrepreneurship and business performance.

In recent years very few individuals are coming forward to take up career in agri-business sector. Perhaps the improvement of situational factors, access to resources and better support system help the individuals to take entrepreneurial activities. This could be promoted and boosted up by developing entrepreneurship development strategy in agri-business sector.

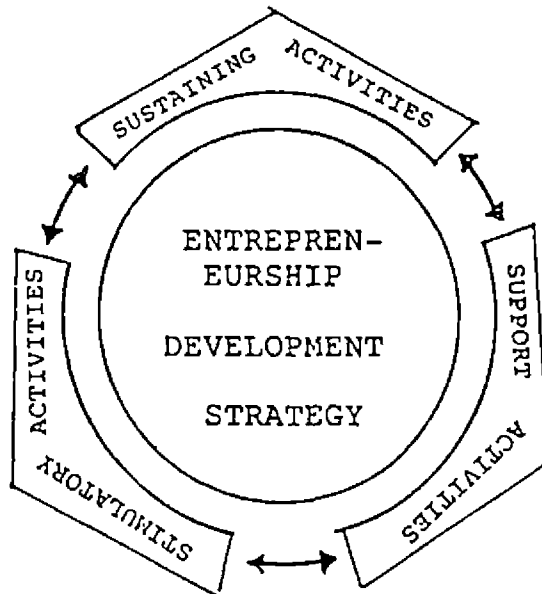
As seen in Fig. 15 entrepreneurship development strategy follows a cycle consisting of stimulatory, supportive and sustaining activities. Each activity is highly interacting, supplementary and crucial to each other. The absence or negligence or over emphasis of any one may render the whole effort infructuous.

4.9.1 Stimulatory activities

The stimulatory activities refer to all such activities related to creating entrepreneurial awareness and entrepreneurial motivation. These activities ensure the supply of entrepreneurs ready to take initiative, risk and organise their enterprises. For creating entrepreneurial awareness and entrepreneurial motivation among agri-business operators vigorous efforts should be made to formulate/launch special entrepreneurial development programmes. These programmes should be developed keeping in view the low profile of agri-business operators in the society. Differential approach should be adopted to motivate the entrepreneurs considering the type of enterprise and location of the entrepreneurs. This could be done through school and college education, mass media and trainings organised by various

- * Finance
 - .Introduction of SWS
 - .Uniform salestax
 - .Formation of EDC in banks
- * Marketing
 - .Separate marketing agency
 - .Setting up marketing corporation
- * .Supply of raw materials by Govt.
- * Labour
 - .Mgt.trg. programme
 - .Recruitment trg.
- * .By ITCO and promotional agency
- * .Ensure uninterrupted power supply

- .Create entrepreneurial awareness & motivation
- .Location-wise EDP
- .Enterprise-wise EDP
- .Inclusion of entrepreneurial curriculum in educational institutions



- .Develop co-ordination between promotion agencies
- .Create awareness on promotion agencies
- .Simplify the procedures and make use of promotion agencies
- .Establish close linkage with support system
- .Setting up of agriprenurship centres

Fig.15 Strategic model for entrepreneurship development in the agri-business sector of Kerala

agencies and social organisations. Further, in educational institutions entrepreneurial curriculum should be included so that graduates can be exposed to the maximum extent to every pros and cons of the topic.

4.9.2 Supporting activities

The supporting activities provide infrastructural facilities, resources, training, ability and skill to agri-business operators for enterprise launching and management. There are many parallel agencies and institutions working for the promotion and development of agri-business, but there is lack of co-ordination, integration and linkage among these agencies in their approach. This leads to duplication and wastage of resources, efforts and diverted goals. Further more, agri-business operators are unaware of these agencies and unable to make use of their services. To add with these the mystified and cumbersome procedures and approaches of the development agencies helps only to deter away the agri-business operators.

A closely knitted linkage system which can persuade, motivate and support the entrepreneurs are the need of the hour. Closeness i.e., co-ordinated and integrated programmes within the supporting agencies is to be reviewed to avoid diversified attempts at all level i.e., at panchayat, block, district and state. A clear perspective on this crucial factor has to be developed among all concerned in policy making, technology development, HRD efforts, financing and promotion efforts.

Among the respondent's training experience was observed in general as very low. This indicates one of the basic need in the promotion of agri-business development i.e., well planned, target oriented, location specific, product and process oriented HRD efforts for entrepreneurship development in agri-business are to be designed and implemented. Hence it is suggested that a well co-ordinated

training strategy should be evolved. Training in entrepreneurship provides an impetus to the potential and budding entrepreneurs to acquire a new identity about himself. This is perceived as an approach towards transforming people which serve the purpose of making people aware about their own identity, helping them to accept the identity and finally establishing such identity for entrepreneurial pursuit. It is also suggested that similar to Krishi Vigyan Kendra, Agripreneurship centres should be established in every districts with the objective of training and growth of agri-business operators.

4.9.3 Sustaining activities

Sustaining activities refer to all such efforts that facilitate growth and continuity of the on-going enterprises and to solve the entrepreneur's constraints viz., lack of financial assistance, high cost and shortage of raw materials, seasonality of demand, etc. Existence of these constraints at entrepreneurial and institutional level affect the emergence of entrepreneurs and their performance. Effective steps, therefore, are needed to be taken to mitigate these constraints.

Finance is the sine-qua-non for any enterprise. But this was reported to be the main constraint coming in the way of agri-business operators. The banking system is not sufficiently responsive to social banking needs and has not been able to get rid of the 'barriers' that deter entrepreneurs from using or gaining access to the available credit facilities. Sufficient alterations and modifications in the rules and procedures are to be brought for making the credit programmes more entrepreneur friendly. Financial institutions at the national and state levels require to be restructured and strengthened by the government for providing equity loans to agri-business units through the District Industries Centres (DIC) based on their feasibility. Further, it would be a great help to the agri-business operators if the government introduces the single window system which would help the

entrepreneurs to complete initial formalities of taking up agri-business units without much problems and endless delay. To avoid unhealthy competition among the new and old agri-business operators, uniform sales tax collection should be followed by the government. The government should encourage the formation of 'Entrepreneurship Development Cells' in all the public sector banks and financial institutions to identify and help the entrepreneurs. Credit co-operative societies are to be set up exclusively for agri-business operators.

One of the crucial factors in any enterprise is marketing. On the marketing front it has been observed that there is no organised marketing channel for many of agri-business enterprises. Even if there are any services, as the entrepreneurs are unaware of such services they are forced to rely completely on middlemen which fetch low price only for their produce. All these indicate the imperative need of a marketing agency in the form of consortia or centre in the co-operative sector both for domestic as well as overseas market. Further all of the agencies, the financial institutions, state advisory boards, co-operative societies, super markets and voluntary agencies etc. have to formulate their promotion strategies based on findings of systematic market surveys and for market feasibility of the products. Setting up of marketing corporation to render the services such as quality testing, adoption of broad-based advertising media for the products, and bringing the products under a common brand name to avoid the competition between small and large units is also suggested.

On the export front, it has been observed that many units have no knowledge of international marketing procedures, incentives available to them and other related information. Exporters normally take export orders far beyond their production capacity and sub-contract the excess quantities to other makers, resulting in serious differences and inconsistencies in quality. Besides, most of the manufacturers are using traditional methods of production which result in lack of

uniformity and standardised production. It is therefore essential to concentrate on measures desired to improve competitive strength of the agri-business units by introducing modern techniques of production.

The problem of raw material is somewhat acute for the agri-business units which suffer on account of absence of any systematic arrangements for the distribution of imported raw materials. Moreover, the import procedure is so cumbersome and their requirements are so small that they could not find it economical to support on actual user licences. The local suppliers exploit them and charge exorbitant prices from the entrepreneurs in the period of scarcity. It is suggested that the government should evolve a comprehensive policy to supply raw materials consistent with the industrial policy of the state.

Poor labour management efficiency was identified as one of the serious impediment faced by the agri-business operators. This underlines the importance of giving necessary emphasis to enterprise management training programmes under EDP, to make the entrepreneurs on capable management. Further, the EDPs should give training to the entrepreneurs to recruit those have necessary skills, efficiency and experience in related line of production. In fact the entrepreneurs should form networks in lines of their production to share their experience, expertise and trained workers necessary for their enterprises. If the management follows, a labour friendly management which provides proper amount of wages, safety and security from accidents and sickness, and necessary terms and conditions of benefits and facilities for personal development may reduce the non-availability of labourers and absenteeism. Identification of the factors or sources influencing inter-firm mobility of labour also would help the entrepreneurs to reduce the labour turn over.

Factors like effective and inexpensive consultancy services, skilled workmen and efficient manager can contribute improved entrepreneurship. Some

Industrial and Technical Consultancy Organisations (ITCO) have started working in many states including Kerala. This is expected to fill up the gap of consultancy services for agri-business units. Generation of proper idea is the basic starting point of any agri-business unit. The promotional agencies like the DIC should formulate 'Idea Banks' with appropriate technologies, project proposals and necessary factors which would aid the entrepreneurs to take up successful projects.

Irregular and inadequate supply of electricity to the agri-business units is another matter causing anxiety to the agri-business operator. It results in frequent interruptions in production and may lead to the uneconomic operation and ultimately to the stoppage of production itself. The state government's policies should be made more agri-business friendly by way of ensuring uninterrupted power supply to the agri-business units during their normal working hours and at lower charge rates.

The obstacles have led to the identification that experience and training are determinantal in developing entrepreneurship. One does not become an expert entrepreneur overnight. The developmental institutions can render great service in educating and training the prospective entrepreneurs. These training programmes should have specific and well defined target groups, and orient the entrepreneurs adequately to the reliable information about rules and regulations connected with the setting up of new agri-business units, the organisations to be contacted and the necessity to maintain market awareness, records and accounts related to the enterprise units, etc.

The presence of a favourable business environment is a must for the entrepreneurial growth in any setup. A healthy business environment necessitates active social and cultural behaviour of the people efficient economic conditions, helpful and motivating government policies.

4.10 Empirical model of the study

The key results on entrepreneurial behaviour of agri-business operator is represented diagrammatically in the empirical model presented in Fig.16.

The diagram consists of five distinct parts. The first part depicts the salient characteristics of agri-business operators. The second part represents the three types of agri-business enterprises selected for the study viz., commercial farming, on-farm and off-farm agri-business units.

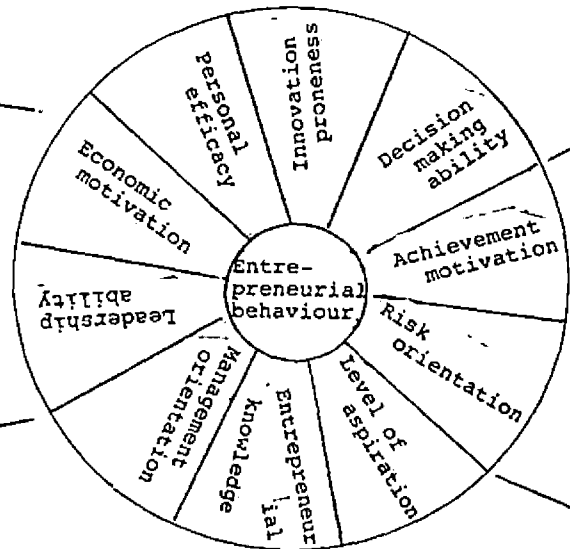
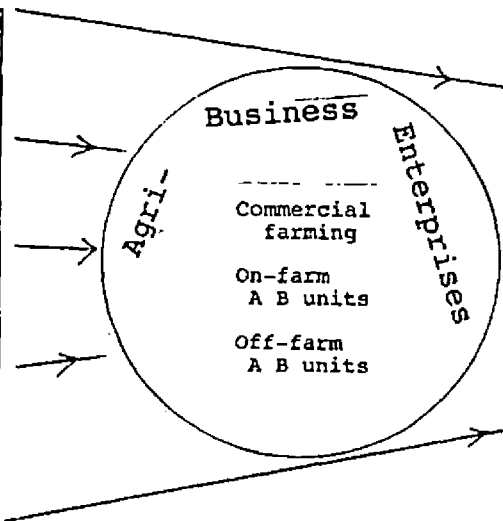
The third part depicts the entrepreneurial behaviour of agri-business operators which is divided into 10 segments representing the entrepreneurial traits/dimensions viz., innovation proneness, decision making ability, achievement motivation, risk orientation, level of aspiration, entrepreneurial knowledge, management orientation, leadership ability, economic motivation and personal efficacy.

The fourth part presents the major constraints influencing the EBI such as finance, marketing, raw material, labour, technical and managerial assistance and electricity.

The last part depicts the agri-business performance which is indicated by capacity utilisation, benefit cost ratio, hired labour, perceived profitability, extent of diversification, labour relationship and social contribution from the enterprise.

AGRI-BUSINESS OPERATOR'S CHARACTERISTICS

- Age
- Age at entry
- Scientific orientation
- Vocational diversification
- Self confidence
- Self concept
- Competition orientation
- Rational orientation
- Self reliance
- Media utilisation



- CONSTRAINTS**
- Finance
 - Marketing
 - Raw materials
 - Labour
 - Tech. & managerial assistance
 - Electricity

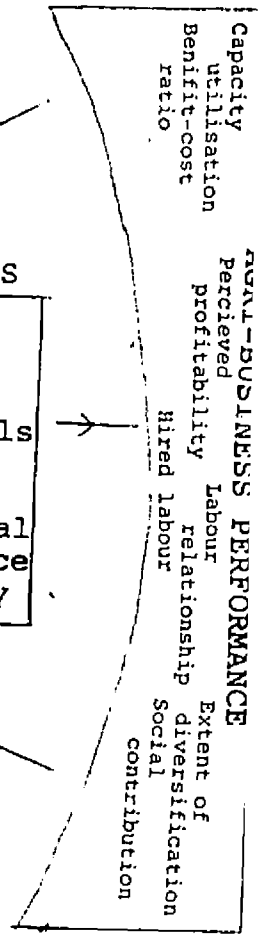


Fig.16 Empirical diagram of the study

Summary and Conclusions

5. SUMMARY AND CONCLUSIONS

Entrepreneurship plays a crucial role in the economic growth of our country. The contribution of agriculture towards national income is about 35-40 per cent. Realising the importance of entrepreneurship in agriculture, Forster (1953) had described farming as a business and had identified farmer as an entrepreneur.

The term entrepreneurship still appears to connote a restricted meaning, being primarily used with reference to self employment in industries. Entrepreneurship as a crucial factor in farm business is not much recognised and appreciated. In the context of the increased importance of agri-business as a means for economic development, the relevance of entrepreneurship development among farmers cannot be exaggerated. The realisation of the importance of this concept in farming had lead to sporadic attempts to identify and analyse entrepreneurship in farm business. The present study forms an effort in this direction to explore, identify and to analyse the crucial dimensions of entrepreneurship among farm business operators and to identify the factors related to the entrepreneurship development.

The specific objectives of the study were:

1. To measure the entrepreneurial behaviour of agri-business operators using a standardised index,
2. To relate the entrepreneurial behaviour of the agri-business operators with their agri-business performance,
3. To identify the behavioural and situational characteristics of agri-business operators which influence their entrepreneurial behaviour,
4. To identify the constraints which affect the entrepreneurial behaviour of agri-business operators and

5. To suggest strategies for entrepreneurship development in the agri-business sector of Kerala.

The Central NARP Region of Kerala covering Palakkad, Thrissur and Ernakulam districts formed the locale of the study. A sample of 240 agri-business operators was selected employing multistage sampling procedure, covering three subcategories viz., commercial farmers, on-farm agri-business operators and off-farm agri-business operators.

One hundred and twenty commercial farmers cultivating major crops of the region - rice, banana, coconut and rubber formed the one category of the agri-business operators. In the category of on-farm agri-business operators, 30 owner operators of each of poultry and nursery enterprises in Thrissur district were selected. Similarly 60 off-farm agri-business operators in the oilmill and food processing sector in Thrissur district were selected to form the third category of respondents. Thus, 240 respondents formed the total sample size of the study.

The dependent variable for the study was entrepreneurial behaviour of the agri-business operators. The major dimensions of entrepreneurial behaviour were identified through relevancy rating. The identified dimensions were innovation proneness, decision making ability, achievement motivation, economic motivation, risk orientation, management orientation, entrepreneurial knowledge, personal efficacy, level of aspiration and leadership ability. As the variable was conceptualised to be multidimensional in nature, it was transformed into a weighted index 'Entrepreneurial Behaviour Index' (EBI) for measurement. Based on the identified dimensions, entrepreneurial behaviour was operationally defined as the ability of an agri-business operator to deal with risk, take appropriate decisions, and manage resources in an optimum manner towards maximising profit of his enterprise with a definite motive so as to excel other stakeholders in the field.

By conducting a pilot study, the developed index was tested and standardised. By the method of Principal Component Analysis (PCA) also, EBI was developed. Both the indices were found to be significantly and positively related.

The Agri-business Performance (ABP) of the respondents formed the criterion variable of the study. ABP was measured using an index, which was developed through the identification of the different indicators of agri-business performance such as capacity utilisation, hired labour, cost-benefit ratio, perceived profitability, labour relationship, extent of diversification and social contribution from the enterprise.

Based on the review of literature and relevancy rating, nineteen independent variables covering behavioural, socio-economic and situational aspects were selected. They were age, age at entry, education, family background, monthly income, occupational status, economic status, scientific orientation, self concept, self confidence, closeness with support system, deferred gratification, vocational diversification, orientation towards competition, credit orientation, rational orientation, training experience, self reliance and media utilisation. These variables were measured using standardised instruments available and in the absence of such instruments, using arbitrary scales developed for the purpose.

The respondents were contacted personally and interview method was resorted to for collecting data using pre-tested and structured interview schedules during May-September 1997. The collected data were analysed using statistical tools like frequency, percentage, Delinious-Hodges cumulative method of classification, analysis of variance, correlation analysis, multiple linear regression analysis, step-down regression analysis, Kendall's coefficient of concordance, principal component analysis and factor analysis.

The salient findings of the study are presented below:

1. Six dimensions of entrepreneurial behaviour were identified as important. They were innovation proneness, achievement motivation, risk orientation, economic motivation, management orientation and personal efficacy. Factor analysis has resulted in grouping these six factors into a single factor, which was named 'Entrepreneurial behaviour efficiency'
2. Entrepreneurial Behaviour Index (EBI) developed through formula and PCA methods were significantly correlated.
3. The respondents were categorised into five groups i.e., very low, low, moderate, high and very high - based on their EBI. It was found that 70 per cent of the agri-business operators were in the range of moderate to very high EBI, while 19.58 and 10.42 per cent of respondents were grouped under low and very low categories respectively.
4. With respect to commercial farmers category, comparatively higher percentage of farmers were in high (30%) and very high (22.50%) categories with respect to their EBI.
5. Regarding on-farm agri-business operator category, 30 per cent of the respondents had very high level of EBI followed by 23.34 per cent in the moderate level.
6. Nearly half of the off-farm agri-business operators (46.66%) had high to very high EBI.
7. The key indicators of agri-business performance were identified as capacity utilisation, hired labour, cost-benefit ratio, labour relationship, perceived profitability, extent of diversification and social contribution from the enterprise.
8. The agri-business operators were categorised into five groups based on their ABPI, i.e., very low, low, moderate, high and very high. Majority (45.41%) of

the respondents had high to very high ABPI. Only 22.92 per cent of the respondents had low to very low performance level.

9. The distribution of three categories of respondents viz., commercial farmers, on-farm and off-farm agri-business operators with respect to ABPI exhibited almost similar distribution i.e., 63.33 per cent, 61.67 per cent and 65.00 per cent of each category had moderate to very high performance.
10. There was significant relationship between the entrepreneurial behaviour and agri-business performance of the agri-business operators.
11. The results of Analysis of Variance revealed that there was no significant difference among the three categories of agri-business operators with respect to their EBI and ABPI.
12. More than 50 per cent of the respondents belonged to high category with respect to capacity utilisation, perceived profitability, labour relationship, and social contribution from the enterprise. In the case of hired labour, cost-benefit ratio and extent of diversification, majority of the respondents belonged to low group.
13. The simple correlation analysis revealed that education, monthly income, economic status, scientific orientation, self confidence, self concept, closeness with support system, orientation towards competition, credit orientation, rational orientation, self reliance and media utilisation were significantly related with entrepreneurial behaviour of agri-business operators.
14. The multiple linear regression analysis revealed that all the 19 independent variables together contributed 71 per cent of the variation in entrepreneurial behaviour of the agri-business operators.
15. The step-down regression analysis highlighted that age, age at entry, scientific orientation, vocational diversification, self confidence, self concept, orientation towards competition, rational orientation, self reliance and media utilisation were the variables significant in predicting the entrepreneurial behaviour of agri-business operators.

16. The major constraints perceived by the agri-business operators with reference to entrepreneurial behaviour were finance, marketing, raw materials, labour, technical and managerial assistance and electricity/power in the descending order of importance.
17. There was high agreement among the three categories of respondents with respect to their perception of the major constraints influencing the entrepreneurial behaviour.
18. Both the indices i.e., entrepreneurial behaviour index and agri-business performance index of the agri-business operators exhibited highly significant negative correlation with their score on perceived constraints.

Implications of the study

The following implications can be drawn from the overall results of the present study.

1. One of the important outcomes of the study is the development of an index for measuring entrepreneurial behaviour which has relevance and application in the field. All those who are interested in measuring entrepreneurial behaviour of agri-business operators in an objective manner can utilise the index developed.
2. As the important dimensions of entrepreneurial behaviour efficiency were found to be risk orientation, achievement motivation, economic motivation, management orientation, innovation proneness and personal efficacy, it is suggested that they should form the main contents of any HRD effort for promoting entrepreneurship among agri-business operators. Training programmes should be tailored to inculcate and strengthen these traits among the entrepreneurs. Entrepreneurship development programme, which focuses on the inculcation of desirable traits among the prospective farm youth should form one of the strategies for promotion of agri-business.

3. The index formulated to measure the agri-business performance can be used by agri-business operators, and agri-business promotion agencies to assess and analyse the performance of any agri-business enterprise.
4. The behavioural characteristics of the entrepreneurs such as age, age at entry, scientific orientation, vocational diversification, self confidence, self concept, orientation towards competition, rational orientation, self reliance and media utilisation were found to exert significant influence on entrepreneurial behaviour. Hence it is suggested that these factors may be borne in mind while designing entrepreneurship development programmes and in identification of prospective entrepreneurs for the training and promotional programmes.
5. The profile analysis of the agri-business operators revealed that majority of them had not received any training related to their enterprise. The officials in various agri-business related areas like Agri-business Consortium, Agri-Horti Societies, DICs, Department of Agriculture etc. have to seriously consider this issue and have to take responsibility to organise enterprise specific and management oriented training programmes for them.
6. There is an urgent need to consider inclusion of more agri-business avenues in the schemes of development departments of state in the future for promoting agri-business sector.
7. Lack of finance was pointed out as the most important constraint in influencing entrepreneurial behaviour. In most of the cases, the agri-business operator takes loans from private agencies on high rate of interest. This calls for suitable policy decisions on the part of the Government to ensure more financial assistance with low rate of interest to the agri-business operators.
8. Seasonality of demand, competition from small scale units, low price for the produce etc. were reported as constraints which affect the entrepreneurial behaviour. There is urgent need for ensuring marketing facilities for agri-business products within and outside the state. Efforts on co-operative basis will help the produces to get remunerative prices for their produce.

Adoption of entrepreneur friendly measures and formation of self help groups of entrepreneurs will motivate the unemployed individuals to venture to enter into agri-business activities.

9. The study highlights the need for establishment of 'agripreneurship centres' in each district in similar lines of Krishi Vigyan Kendras. The mobile agri-business advisory services may also be initiated to provide technical guidance to the agri-business operators.
10. Gender friendly entrepreneurship development programmes will help to bring unemployed women as labour force in the production sector for which some effort has to be initiated by the Government.

Suggestions for future research

1. The present study was confined to the Central NARP Zone of the state. It is suggested that the study may be replicated on similar lines in other NARP zones also to validate the findings, for the entire state.
2. The scope for the present investigation was restricted to only eight agri-business enterprises. Further studies may be taken up on the entrepreneurial behaviour of other agri-business enterprises also like sericulture, mushroom cultivation, orchid cultivation, life-stock units, fish ponds units, etc.
3. Detailed studies may be conducted on the training needs of agri-business operators.
4. Detailed studies may be organised on the problems faced by the agri-business operators and agri-business promotion agencies with a view to evolve suitable strategies to solve their pressing problems.
5. Action research may be initiated to standardise the course content of various entrepreneurial components that can form a base material for imparting suitable training for the agri-business operators and also to analyse the impact of such training in actual field situation.

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Appendices

APPENDIX-I
KERALA AGRICULTURAL UNIVERSITY

Dr.P.S.Geethakutty
Associate Professor

College of Agriculture
KAU, Pilicode
Dated:

Dear Sir/Madam,

Sri. S.Senthil Vinayagam is undertaking a study entitled “Entrepreneurial behaviour of agri-business Operators” as part fulfilment of his Ph.D. programme under my guidance. The main objective of his study is to develop an index for measuring entrepreneurial behaviour of commercial farmers, on-farm and off-farm business operators. The study also aims to analyse their agri-business performance and relate the entrepreneurial behaviour with behavioural and situational variables. In this context he has identified certain dimensions/variables in relation to entrepreneurial behaviour.

Considering your rich experience and expertise, you have been identified as a judge for rating the relevancy of the list of dimensions/variables furnished in the enclosed appendices (Appendices Ia and Ib) you may please indicate your opinion about the inclusion of each variable in the study by marking (✓) against each variable under the appropriate column. You can also add other variables which you think are related and also rate them under the appropriate column.

I am aware that, you have a busy schedule. Yet I hope that you will kindly spare sometime for us. Your kind and early action in the matter would greatly help us to complete the study in time. Please return the duly filled annexure to the address indicated in the envelope at the earliest.

Thanking you,

Yours faithfully,

Sd/-
(P.S.Geethakutty)

To

APPENDIX-1(a)
DIMENSIONS OF ENTREPRENEURIAL BEHAVIOUR

The possible dimensions of entrepreneurial behaviour of agribusiness operators are listed below. The dimensions have been identified through review of related literature and discussion with experts. The relevancy of including these dimensions in measuring the entrepreneurial behaviour may be marked by a (√) in the appropriate column.

| Sl. No. | Dimensions of Entrepreneurial behaviour | Relevancy | | | | |
|---------|---|---------------|---------------|----------|---------------|----------------|
| | | Most relevant | More relevant | Relevant | Less relevant | Least relevant |
| 1. | Innovation - Proneness | | | | | |
| 2. | Decision making ability | | | | | |
| 3. | Achievement motivation | | | | | |
| 4. | Risk orientation | | | | | |
| 5. | Level of aspiration | | | | | |
| 6. | Locus of control | | | | | |
| 7. | Entrepreneurial knowledge | | | | | |
| 8. | Management orientation | | | | | |
| 9. | Ability to co-ordinate farm activities | | | | | |
| 10. | Leadership ability | | | | | |
| 11. | Economic motivation | | | | | |
| 12. | Personal efficacy | | | | | |
| 13. | Cosmopolitaness | | | | | |
| 14. | Any other (please specify) | | | | | |

APPENDIX-I(b)

The following are the independent variables identified. Kindly rate the relevancy by marking (√) in the appropriate columns.

| Sl. No. | Relevancy | | | | |
|--|-----------------------|-----------------------|----------|-----------------------|------------------------|
| | Most rele- vant | More rele- vant | Relevant | Less rele- vant | Least rele- vant |
| 1. Age | | | | | |
| 2. Age at entry | | | | | |
| 3. Education | | | | | |
| 4. Family background | | | | | |
| 5. Family size | | | | | |
| 6. Family educational status | | | | | |
| 7. Farm size | | | | | |
| 8. Monthly income | | | | | |
| 9. Occupational status | | | | | |
| 10. Labour availability | | | | | |
| 11. Family labour utilisation | | | | | |
| 12. Economic status | | | | | |
| 13. Social participation | | | | | |
| 14. Scientific orientation | | | | | |
| 15. Self concept | | | | | |
| 16. Self confidence | | | | | |
| 17. Indebtedness | | | | | |
| 18. Closeness with support system | | | | | |
| 19. Overall modernity | | | | | |
| 20. Deferred gratification | | | | | |
| 21. Vocational diversification | | | | | |
| 22. Orientation towards competition | | | | | |
| 23. Rational orientation | | | | | |
| 24. Credit orientation | | | | | |
| 25. Training experience | | | | | |
| 26. Self-reliance | | | | | |
| 27. Media utilisation | | | | | |
| 28. Any other (please specify) | | | | | |

APPENDIX-II
Items selected for entrepreneurial knowledge test

| Sl. No. | Items | Difficulty index | Discrimination index |
|---------|---|------------------|----------------------|
| 1 | 2 | 3 | 4 |
| 1 | Enlist any three enterprises in agriculture you are aware of :,, | 100.0 | 0.0 |
| 2 | Can you name a cash crop grown extensively in your locality for sale rather than consumption in the family? | 100.0 | 0.0 |
| 3* | Name two officials who help and guide to establish crop/non crop enterprise | 76.7 | 0.4 |
| 4 | Where is co-operative service society located? | 100.0 | 0.0 |
| 5 | What is the basic objective of Krishi Bhavan/DIC? | 93.3 | 0.1 |
| 6 | Where is DRDA office located? | 0.0 | 0.0 |
| 7 | Where is the nearest commercial bank situated? | 100.0 | 0.0 |
| 8 | How can banks help you to establish crop/non crop enterprise? | 100.0 | 0.0 |
| 9* | Name two organisations which are concerned directly with imparting entrepreneurial development training in your locality? | 46.7 | 0.7 |
| 10 | What are the primary sources of credit? | 86.7 | 0.2 |

Contd.

Appendix-II. Continued

| 1 | 2 | 3 | 4 |
|-----|---|-------|-----|
| 11* | How much the Krishi Bhavan/DIC provides as a loan for establishing the enterprise? i) Total unit cost ii) Less than unit cost | 66.7 | 0.5 |
| 12 | Can you tell the procedure to purchase pumpset/machinery from Krishi Bhavan/DIC? | 76.7 | 0.2 |
| 13 | What is the interest rate of commercial bank for agricultural loan? | 93.3 | 0.0 |
| 14 | Name two government programmes under which facilities for establishing agricultural enterprises are provided? | 46.7 | 0.2 |
| 15 | State any three essential factors to be taken into consideration while selecting enterprises? | 60.0 | 0.2 |
| 16* | It is advisable to start with a project only because some one else is doing well or some one has assured you to decide your project. Correct/Incorrect | 53.3 | 0.6 |
| 17 | Which of the following statement is not an essential characteristic of business? (1) Profit motive, (2) Dealing in goods and services, (3) Black-marketing, (4) Elements of risk | 100.0 | 0.0 |
| 18* | If return on investment is lower than bank rate of interest money should be kept in bank rather using a business enterprise. True/False | 73.3 | 0.4 |

Contd.

Appendix-II. Continued

| 1 | 2 | 3 | 4 |
|-----|---|-------|-----|
| 19 | If return on investment in project 'A' is 18% and in project 'B' is 32% which is preferable from financial point of view? | 80.0 | 0.3 |
| 20* | Where is rubber board/coconut board/ Krishi Bhavan/Veterinary hospital/ Agri-Horti Society/DIC situated? | 40.0 | 0.4 |
| 21 | District with highest production of your enterprise in Kerala | 66.7 | 0.3 |
| 22 | What is the basic objective of NABARD? | 6.7 | 0.2 |
| 23 | For mango pickle raw material is available in Palakkad. But Ernakulam is good for marketing pickle. If the entrepreneur establishes his unit for manufacturing pickle at Ernakulam, will the unit succeed or fail? | 73.3 | 0.3 |
| 24* | Can profitability of the unit be improved, if the location of the unit is near the sources of various inputs and market? Yes/No | 76.7 | 0.4 |
| 25 | Market analysis determines whether the product can be sold in the market being analysed? Yes/No | 100.0 | 0.0 |
| 26 | Name three important factors to be studied while conducting market survey? | 10.0 | 0.3 |
| 27* | To have a competitive sale of price, the entrepreneur should ensure than the product is less/more | 50.0 | 0.6 |

Contd.

Appendix-II. Continued

| 1 | 2 | 3 | 4 |
|-----|--|------|-----|
| 28 | A majority of the reasons that cause failure can be avoided if you have in advance surplus finance/proper planning. Yes/No | 93.3 | 0.1 |
| 29* | How will you analyse the success or failure of your enterprise? 1) Based on the expenditure-income register 2) Based on the amount in hand | 43.3 | 0.9 |
| 30* | Name two essential account books/files required to be maintained in your enterprise 1., 2. | 53.3 | 0.9 |

* Items selected for entrepreneurial knowledge

B) Material possession:

| | No. | Cost |
|-----------------------|-----|------|
| a) Enterprise related | | |
| b) General | | |
| Bicycle | | |
| Scooter | | |
| Watch | | |
| Radio | | |
| Tape recorder | | |
| Fridge | | |
| Car | | |
| Telephone | | |
| LPG Cylinder | | |
| Other (specify) | | |

C) Fixed assets position:

Worth (Rs.)

- Land
- Buildings
- Machinery & Plants

8. SCIENTIFIC ORIENTATION

Adoption of new methods in an enterprise increases the income of the entrepreneur. Here, six statements will be read out, please give your agreement, disagreement or undecidedness about each of the following statements.

- SA - Strongly agree DA - Disagree
- A - Agree SDA - Strongly Disagree
- UD - Undecided

| Statements | SA | A | UD | DA | SDA |
|---|----|---|----|----|-----|
| 1. New methods in enterprise give better results to entrepreneur than old methods | | | | | |
| 2. The way the forefather managed an enterprise is still the best way today also | | | | | |
| 3. Even an entrepreneur with lot of experience should use new methods | | | | | |
| 4. A successful entrepreneur experiments with new ideas | | | | | |
| 5. Traditional methods in any enterprise have to be changed in order to raise the level of living of entrepreneur | | | | | |

6. Though it takes time for an entrepreneur to learn new methods in enterprise, it is worth the efforts

9. DEFERRED GRATIFICATION

Supposing that your net return from the enterprise during last year had been twice your actual net income, what would you do with the extra money?

- a) Spend on food/clothing/Furniture/house repairs (1)
- b) Spend on social obligation such as wedding/birthday feast/pilgrimage (2)
- c) Pay off debts (3)
- d) Save without any purpose (4)
- e) Purchase or save to purchase land (5)
- f) Purchase or save money to purchase agricultural inputs (6)
- g) Invest or save money to invest on non-agricultural business (7)
- h) Invest on education (8)

10. VOCATIONAL DIVERSIFICATION

1) a) Besides enterprise, do you have any other source of income?
Yes/No

b) If yes, what is/are the source(s) of income?

2) a) Please give the following details of the sources of your income

| Source/ occupation | Special future if any | Investment | Income | Year of start | Who is engaged? |
|-----------------------|--------------------------|------------|--------|------------------|--------------------|
|-----------------------|--------------------------|------------|--------|------------------|--------------------|

b) Did you have any other source(s) of income earlier? Yes/No
If yes, please give the following details

| Source/ occupation | Special future | Investment | Income | Year of closing | Reasons for closing |
|-----------------------|----------------|------------|--------|--------------------|------------------------|
|-----------------------|----------------|------------|--------|--------------------|------------------------|

11. SELF CONFIDENCE

Please answer whether the following statements are 'Agree' or 'Disagree' in your case.

- | | |
|---|-----|
| 1. I have a horror of failing in anything I want to accomplish | A/D |
| 2. I feel insecure within myself | A/D |
| 3. I can face a difficult situation without worry | A/D |
| 4. I am hesitant about taking decisions | A/D |
| 5. I frequently feel unworthy | A/D |
| 6. I can adjust readily to new situation | A/D |
| 7. I am usually discouraged when the opinions of others differ from my own | A/D |
| 8. I have several times given up doing a thing because I thought too little of my ability | A/D |
| 9. I find it hard to keep my mind on a task or job | A/D |
| 10. I have enough faith in my ability | A/D |

12. SELF CONCEPT

Please indicate your extent of agreement/disagreement to the following statements

| Statements | SA | A | UD | DA | SDA |
|---|----|---|----|----|-----|
| 1. I am interested in people and things happening around me | | | | | |
| 2. I am active in solving the problems of other entrepreneurs with regard to enterprise | | | | | |
| 3. I am systematic in all my activities so that I can finish the works allotted to me in time | | | | | |
| 4. I am determined to achieve my goals as an entrepreneur | | | | | |
| 5. I am a person who believes that every experience, bitter or sweet is good | | | | | |
| 6. I am not courteous in my dealings with other entrepreneurs | | | | | |
| 7. I am eager to learn more on all subjects | | | | | |
| 8. I am not capable of easily adjusting to new situations | | | | | |

13. CLOSENESS WITH SUPPORT SYSTEM

Please indicate the extent to which you are in contact with the following personnel.

| Personnel | Most often | Often | Sometimes | Never |
|--------------------------------------|------------|-------|-----------|-------|
| 1. Officers of Dept. of Agrl. | | | | |
| 2. Scientists of Agrl. University | | | | |
| 3. Officials of A.H. Dept. | | | | |
| 4. Officials of Milma | | | | |
| 5. Panchayat officials | | | | |
| 6. Personnel in co-operative society | | | | |
| 7. Input dealers | | | | |
| 8. Bank officials | | | | |
| 9. Insurance agents | | | | |
| 10. Marketing personnel | | | | |
| 11. Others (specify) | | | | |

14. ORIENTATION TOWARDS COMPETITION

What is your degree of agreement for the following statements?

| Statements | SA | A | DA | SDA |
|--|----|---|----|-----|
| 1. The key points of success in an enterprise should not be divulged to other people | | | | |
| 2. A higher profit in comparison to the neighbours brings more prestige | | | | |
| 3. It is of no use to keep information on what other people are doing | | | | |
| 4. Competitions should be organised on all important enterprises | | | | |
| 5. Better operation provides opportunity for recognition by the extension officers | | | | |
| 6. It is not good for an entrepreneur to become to ambitious in life | | | | |

15. CREDIT ORIENTATION

1. If one needs loan, what are the sources or institutions in your locality to obtain loan for establishing enterprise?
 a) Banks b) Co-operatives c) Money lenders
 d) Friends e) Block office f) Relatives g) Others (specify)

2. Have you ever taken loan for purchase of inputs? Yes/No
 If No,

- a. i) Why?
 ii) Have you ever thought of taking loan? Yes/No
 iii) Have you ever tried to take loan? Yes/No
 If yes, what did you do and what happened?

- b. If yes, in Q.2,
 i) When and from which source? Please give the details for the last three years?

| Institution | Nature of loan taken | Purpose | Amount received |
|-------------|----------------------|---------|-----------------|
|-------------|----------------------|---------|-----------------|

- iii) Have you returned the loan that you had taken? Yes/No
 a) If No, what was the reason?
 b) If Yes,

| Source | Nature of loan taken | Amount received | Time of return | Amount returned | Remarks |
|--------|----------------------|-----------------|----------------|-----------------|---------|
|--------|----------------------|-----------------|----------------|-----------------|---------|

- c) When you need loan whether you take from the above mentioned institutions or you have left taking loan?
 d) If you have left taking loan, what are the reasons?
 e) What is your experience about the loan facility? What are the advantages and disadvantages?

| Advantages | Disadvantages | Remarks |
|------------|---------------|---------|
|------------|---------------|---------|

16. RATIONAL ORIENTATION

What do you feel about the increased income and improvement in life?

- a). Belief in stars and not in scientific recommendations
- b) Belief in stars and scientific recommendations
- c) Belief only in scientific recommendations

17. TRAINING EXPERIENCE

Have you participated in any training programme? Yes/No

If Yes, please give the details

| Name of training undergone | Name of institution | Purpose of training | Duration | Utility |
|----------------------------|---------------------|---------------------|----------|---------|
|----------------------------|---------------------|---------------------|----------|---------|

18. SELF-RELIANCE

How much of your future depends on yourself?

- | | | |
|------------|----------|---------|
| Fully 100% | 75%-99% | 50%-74% |
| 25%-49% | 01% -24% | |

19. MEDIA UTILISATION

Do you make use of any of the following sources for obtaining technical information related to your enterprise:

| Mass media | Most often (once a week) | Often (once a fortnight) | Some times (once a month) | Rarely (once a year) |
|------------|-----------------------------|-----------------------------|------------------------------|-------------------------|
|------------|-----------------------------|-----------------------------|------------------------------|-------------------------|

1. T.V.
 2. Radio
 3. Newspaper
 4. Farm magazine
 5. Video cassettes
 6. Others (specify)
-

PART-II
Components of Entrepreneurial Behaviour

a) INNOVATION PRONENESS

3 statements at a time will be read out. Please hear these statements carefully and indicate one statement out of the three you hear that is “most like” you and also find another statement out of the same that is “least like” you (Response to be circled)

- 1.a) I try to keep myself upto date with information on new practices, but that does not mean that I try out all the new methods on my enterprise
 - b) I feel restless till I try out new practices I have heard about
 - c) They talk of many new practices these days but who knows if they are better than the old one
- 2.a) From time to time I have heard of several new practices related to enterprise and I have tried out most of them in the last few years
 - b) I usually wait to see what results my neighbours obtain before I try out the new practices
 - c) Somehow I believe that the traditional ways of different practices are the best
- 3.a) I am cautious about trying of new practices
 - b) After all, our forefathers were wise in the traditional practices and I don't see any reason for changing these old methods
 - c) Often new practices are not successful, however, if they are promising I would surely like to adopt them

b) DECISION MAKING ABILITY

Please tell whether you have taken decision for each of the following in your enterprise. If yes, was the decision taken on your own or in consultation with others?

| Decision criteria | Not considered | Considered after consultation with others | Considered independently |
|---|----------------|---|--------------------------|
| 1) To try new item/variety | | | |
| 2) Borrow money for the enterprise | | | |
| 3) To buy equipment | | | |
| 4) Choose kind of inputs | | | |
| 5) To attend meeting/seminars | | | |
| 6) Subscribe to farm publications | | | |
| 7) Hire farm workers | | | |
| 8) To try new practice in enterprise | | | |
| 9) To increase or decrease the size of enterprise | | | |
| 10) To switch to new enterprise | | | |

c) ACHIEVEMENT MOTIVATION

Please complete the sentences by choosing the appropriate answers.

- In whatever work I undertake on my farm,
 - I like to do depending on my mood
 - I like to do my best
 - I do not assume full responsibility for it
- I am always keen
 - To maintain the social status
 - To project my image
 - To develop my qualification
- I feel happy when
 - Others tell about my personal experience
 - I am assigned a difficult job
 - I am required to give advice to others

4. My secret ambition in life is

- a) To deal a happy married life
- b) To establish a glorious record of achievement
- c) To own a large farm unit

5. I like to venture something which

- a) Others can hardly do
- b) Will make one wealthy
- c) Others regard as a quality of leadership

d) RISK ORIENTATION

Kindly give your agreement or disagreement about each of the following statements.

| Statements | S/A | A | UD | DA | S/DA |
|---|-----|---|----|----|------|
| 1. An entrepreneur should grow larger number of crops or having more number enterprises to avoid greater risk involved in having one or two | | | | | |
| 2. An entrepreneur should take more of a chance in making a big profit than to be content with a smaller but less risky profit | | | | | |
| 3. An entrepreneur who is willing to take greater risk than the average entrepreneur usually does better financially | | | | | |
| 4. It is good for an entrepreneur to take risk when he knows his chance of success is fairly high | | | | | |
| 5. It is better for an entrepreneur not to try new method in enterprise unless most others in the locality have used it with success | | | | | |
| 6. Trying entirely a new method in enterprise by an entrepreneur involves risk but is worth it | | | | | |

e) ECONOMIC MOTIVATION

Given below are three sets of statements. In each of the set, please indicate which one of the three statements describes you 'most like' and 'least like'.

| Statements | Most like | Least like |
|---|-----------|------------|
| A) i) All I want from my enterprise is to make just reasonable living for the family | | |
| ii) In addition to making reasonable profit, the enjoyment in running an enterprise is also important for me | | |
| iii) I would invest in an enterprise to the maximum, to gain large profit | | |
| B) i) I would not hesitate to borrow any amount of money in order to run the enterprise properly | | |
| ii) Instead of going in for new enterprises which cost more money, I follow the routine enterprise | | |
| iii) It is not only monetary benefit but also the enjoyment of work done, which gives me satisfaction for my hard work on running an enterprise | | |
| C) i) I hate to borrow money on principles even when it is necessary for properly running the enterprise | | |
| ii) My main aim is maximising monetary profit in enterprise by having just one in comparison to having more enterprises | | |
| iii) I avoid excessive borrowing of money for enterprise diversification | | |

f) ENTREPRENEURIAL KNOWLEDGE

Please answer the following:

1. Name two officials who help and guide to establish crop/non-crop enterprise
2. Name two organisations which are concerned directly with imparting entrepreneurial development training in your locality?
3. How much of Krishi Bhavan/DIC provides as a loan for establishing the enterprise?
(i) Total unit cost (ii) Less than the unit cost
4. It is advisable to start with a project only because some one else is doing well or some one has assured you to decide your project. Correct/Incorrect
5. If return on investment is lower than bank rate of interest money should be kept in bank rather using a business enterprise. True/False
6. Where is rubber board/coconut board/Krishi Bhavan of your panchayat/Veterinary hospital of your panchayat/Agri-Horti Society/DIC situated?
7. Can profitability of the unit be improved, if the location of the unit is near the sources of various inputs and market? Yes/No
8. To have a competitive sale of price, the entrepreneur should ensure that the product cost is less/more.
9. How will you analyse the success or failure of your enterprise?
(1) Based on the expenditure - income register
(2) Based on the amount in hand
10. Name two essential account books/files required to be maintained in your enterprise.
(1) (2).....

g) MANAGEMENT ORIENTATION

What is your opinion about the following statements and please state the degree of your agreement or disagreement to each of the following statement given below.

| Statements | Agree | Disagree |
|------------|-------|----------|
|------------|-------|----------|

A. Planning orientation

1. Each year one should think afresh about the crop to be cultivated in each type of land (or)
Each year one should think afresh about the performance of enterprise during the current year
2. It is not necessary to make a prior decision about the variety of crop to be cultivated (or)
It is not necessary to make a prior decision about the new product to be launched
3. The amount of inputs required for the enterprise shall be assessed well ahead
4. It is now necessary to think ahead of the cost involved in raising a crop (or)
It is now necessary to think ahead of the cost involved in running the enterprise
5. One need not consult any expert for planning
6. It is possible to increase the returns through production plans

B. Production orientation

1. Timely planting of crop ensures good yield (or)
Timely use of raw materials ensures good return
2. One should use as much as inputs he likes
3. Determining fertilizer dose by soil testing saves time (or)
Planning with regard to the required inputs saves money and time
4. For timely weed control one should even use suitable herbicides (or)
There is need to take care about the quality and approved standards for produces
5. Seed rate should be given, as recommended by the specialist (or)
Technical recommendations should be strictly followed in production

6. With low water rates one should use as much irrigation water as possible (or)
Production factors like labour should be utilised with target of maximising productivity

C. Marketing orientation

1. Market use is not so useful to the entrepreneurs
2. One can get good price by grading his produce
3. Ware house can help one to get better price for his produce (or)
Storing and selling the produce in off-season can help an entrepreneur to get better price for his produce
4. One should sell his produce to the nearest market irrespective of price
5. One should purchase his inputs from the shop where his relatives purchase
6. One should grow those crops/run an enterprise which has more market demand

h) PERSONAL EFFICACY

Everybody has certain principles, values and aspirations in life and this vary from person to person. I would like to know something about your principles, values and aspirations in life.

1. First of all, tell me something about yourself such as your introduction, your general views etc.
2. Are you the same or something different today as you were in the past? If different, in what way?
3. Tell something about your likings ie., something which you like.
4. Tell something about your dislikes ie., all those things which you don't like.
5. Please tell me something about your ambitions in your life.
6. What do you plan to take up in the next future?
7. What would you do if some hurdles come in implementing the plan you are proposing to take for action?
8. At present what are you doing to make improvement in the enterprise?
9. Please say something more if you so like.

5. What would you expect to be the increase in the produce of the enterprise in the next 3 years?
- Lower than the previous year (0)
 - Same level like previous year (1)
 - Expecting more than previous year (2)
6. What would be the type of house you expect to have in next 3 years?
- One roomed kutchra house (1)
 - 2-3 roomed kutchra house (2)
 - Mixed house (partly kutchra and partly pucca) (3)
 - 4-5 roomed pucca house (4)
 - Mansion (5)
7. What would be the machineries and equipments you expect to possess in the next 3 years?
- | | |
|----------------------------|---------------------------------|
| Ploughs (1) | Sprayer (1) |
| Soil inverting ploughs (1) | Tracer (1) |
| Harrow (1) | Oil engine & electric motor (1) |
| Thresher (1) | Any others (1) |
| Winnowing fan (1) | |
8. What would you expect to be your general contentment (satisfaction) in life in next 3 years?
- Less satisfaction (1) / Somewhat satisfaction (2) / More satisfaction (3)

j) LEADERSHIP ABILITY

An entrepreneur has to take decision, get the things done, initiate the action, motivate the follower. Here are some statements related to this aspect. Please give your response.

Yes

Never

Always Sometimes

- 1) Did you participate in discussion on new practices on your enterprise in the group meeting or in peer group?

- 2) Whenever you see a new practice did you initiate discussion about it with your colleagues?
 - 3) Do the other people regard you as a good source of information on new practice?
 - 4) Do you assign the work related to enterprise to your family members?
 - 5) Do you offer new approaches to solving problem?
-

PART-III
Particulars Relating to Enterprise

AGRI-BUSINESS PERFORMANCE

I. Capacity utilisation

Extent of utilisation of potential resource (land/installed capacity)

0-25% 26-50% 51-75% 76-100%

During 1995

During 1996

II. Benefit-cost analysis:

1. Area

Enterprise

Size of the Enterprise

1995

1996

| 1995 | | | 1996 | | |
|------------|-------------------|-------------|------------|-------------------|-------------|
| Area (ac.) | Quantity produced | Value (Rs.) | Area (ac.) | Quantity produced | Value (Rs.) |
| | | | | | |

2. Cost of inputs : (Rs.)

| | 1995 | | 1996 | |
|----------------------------|----------|------|----------|------|
| | Quantity | Cost | Quantity | Cost |
| Raw materials | | | | |
| Manures | | | | |
| Fertilizers | | | | |
| Plant protection chemicals | | | | |
| Irrigation charges | | | | |
| Feed | | | | |
| Bottles | | | | |
| Other (especificy) | | | | |

3. Cost of labour

| Type of labour | 1995 | | | 1996 | | | |
|------------------|------|---|-------------------------|------|---|-------------------------|-------------------|
| | M | F | Wage rate per day (Rs.) | M | F | Wage rate per day (Rs.) | Total labour days |
| a. Self employed | | | | | | | |
| i) Farm | | | | | | | |
| ii) Factory | | | | | | | |
| iii) Office | | | | | | | |
| b. Family labour | | | | | | | |
| i) Farm | | | | | | | |
| ii) Factory | | | | | | | |
| iii) Office | | | | | | | |
| c. Hired labour | | | | | | | |
| i) Farm | | | | | | | |
| ii) Factory | | | | | | | |
| iii) Office | | | | | | | |

M - Male; F - Female

III. Perceived profitability of the enterprise:

How do you rate running of your enterprise?

| | | | | |
|----------------------|------------|-------------------------|----------------------|----------------------|
| Highly profitable | Profitable | Some what profitable | Some what on loss | Very much on loss |
|----------------------|------------|-------------------------|----------------------|----------------------|

IV. Labour relationship:

How is owner - labour relationship?

| | | | | |
|---------------------|--------|---------------------|------------------|-----------------------|
| Very much smooth | Smooth | Some what smooth | Less strained | Very much strained |
|---------------------|--------|---------------------|------------------|-----------------------|

V. Extent of diversification

- a) Do you supply any raw material(s) to other entrepreneur? (Yes/No)
- b) Will you market the primary produce by yourself? (Yes/No)
- c) Have you established any secondary units for value addition for the produce? (Yes/No)

VI. Social contribution from enterprise:

- | | |
|--|--|
| 1. Service | 6. Aesthetic development |
| 2. Infrastructural development | 7. Preservation and protection of the environment |
| 3. Agricultural development | 8. Production of raw materials for other enterprises |
| 4. Meeting consumption need of the society | 9. Labour generation |
| 5. Health improvement in society | |

PART-IV
Constraints

How do you perceive the following constraints in your enterprise which affects the performance?

| Constraints | Most serious | More serious | Serious | Less serious | Least serious |
|-------------|-----------------|-----------------|---------|-----------------|------------------|
|-------------|-----------------|-----------------|---------|-----------------|------------------|

1. Raw materials
 - a. Scarcity
 - b. High prices
 - c. Low quality
 - d. Problem of transport
 - e. Any other (specify)
 2. Marketing
 - a. Low price for the produce
 - b. Frequent fluctuation in prices
 - c. Competition from other small scale units
 - d. Competition from large scale units
 - e. Seasonality of demand
 - f. Non-availability of foreign market
 - g. Difficulty in establishing domestic market
 - h. Problems of transport
 - i. Problems of middle men
 - j. Any other (specify)
 3. Power
 - a. Scarcity
 - b. Uncertainty
 - c. High cost
 - d. Any other (specify)
 4. Labour
 - a. High labour cost
 - b. Lack of skill/training
 - c. Labour management
 - d. Low turnover
 - e. Non-availability/absenteeism
 - f. Any other (specify)
-

| Constraints | Most serious | More serious | Serious | Less serious | Least serious |
|-------------|--------------|--------------|---------|--------------|---------------|
|-------------|--------------|--------------|---------|--------------|---------------|

5. Finance

- a. Shortage of meagre initial in-hand finances for working capital
- b. Shortage of meagre initial in-hand finance for fixed capital
- c. High rate of interest
- d. Red-tapism in government agencies
- e. Lack of financial assistance from the government agencies
- f. Structure of excise duty
- g. Tax structure
- h. Any other (specify)

6. Technical & Managerial assistance

- a. In-effective consultancy service provided by the government agencies
 - b. Highly expensive consultancy service of private agencies
 - c. Non-availability of skilled workmen
 - d. Non-availability of efficient managers
 - e. Any other (specify)
-

APPENDIX-IV

Scoring pattern followed for social contribution by the enterprise

| Sl.No. | Enterprise | Area of social contribution | Score |
|---------------|-------------------|---|--------------|
| 1 | Paddy | Agricultural development Meeting consumption need of the society Health improvement in society Production of raw materials for other enterprises Labour generation | 5 |
| 2 | Banana | Agricultural development Meeting consumption need of the society Health improvement in society Production of raw materials for other enterprises Labour generation | 5 |
| 3 | Coconut | Agricultural development Meeting consumption need of the society Health improvement in society Production of raw materials for other enterprises Labour generation | 5 |
| 4 | Oilmill | Infrastructural development Meeting consumption need of the society Health improvement in society Production of raw materials for other enterprises Labour generation | 5 |
| 5 | Rubber | Agricultural development Preservation and protection of the environment Production of raw materials to other enterprises Labour generation | 4 |
| 6 | Nursery | Agricultural development Aesthetic development Preservation and protection of the environment Labour generation | 4 |
| 7 | Food processing | Infrastructural development Meeting consumption need of the society Health improvement in society Labour generation | 4 |
| 8 | Poultry | Meeting consumption need of the society Health improvement in society Labour generation | 3 |

APPENDIX-V
Eigen values for ten factors

| Factor Number | Eigen values |
|---------------|--------------|
| 1 | 5.48753 |
| 2 | 0.77655 |
| 3 | 0.72686 |
| 4 | 0.62115 |
| 5 | 0.52209 |
| 6 | 0.47762 |
| 7 | 0.43817 |
| 8 | 0.34430 |
| 9 | 0.33664 |
| 10 | 0.26909 |

* Dimensions selected for grouping

APPENDIX-VI
Rotated estimate of factor loadings

| Sl.No. | Dimension | Factor loading |
|---------------|---------------------------|-----------------------|
| 1 | Innovation proneness | 0.77204 |
| 2 | Decision making ability | 0.72314 |
| 3 | Achievement motivation | 0.78489 |
| 4 | Risk orientation | 0.82865 |
| 5 | Economic motivation | 0.77500 |
| 6 | Entrepreneurial knowledge | 0.64603 |
| 7 | Management orientation | 0.77365 |
| 8 | Personal efficacy | 0.75129 |
| 9 | Level of aspiration | 0.59231 |
| 10 | Leadership | 0.73081 |

APPENDIX-VII

Independent variables selected for relevancy with their frequency and percentage
(n=53)

| Variables | Frequency | Percentage |
|------------------------------------|-----------|------------|
| 1 Age | 38 | 71.69* |
| 2 Age at entry | 39 | 73.58* |
| 3 Education | 40 | 75.47* |
| 4 Family background | 38 | 71.69* |
| 5 Family size | 12 | 22.64 |
| 6 Family educational status | 21 | 39.63 |
| 7 Farm size | 34 | 64.15 |
| 8 Monthly income | 42 | 79.25* |
| 9 Occupational status | 38 | 71.69* |
| 10 Labour availability | 30 | 56.60 |
| 11 Family labour utilisation | 28 | 52.63 |
| 12 Economic status | 43 | 81.14* |
| 13 Social participation | 37 | 69.81 |
| 14 Scientific orientation | 48 | 90.57* |
| 15 Self concept | 40 | 75.47* |
| 16 Self confidence | 48 | 90.57* |
| 17 Indebtedness | 24 | 45.28 |
| 18 Closeness with support system | 41 | 77.36* |
| 19 Overall modernity | 37 | 69.81 |
| 20 Deferred gratification | 38 | 71.69* |
| 21 Vocational diversification | 41 | 77.36* |
| 22 Orientation towards competition | 43 | 81.13* |
| 23 Rational orientation | 45 | 84.90* |
| 24 Credit orientation | 42 | 79.25* |
| 25 Training experience | 43 | 81.13* |
| 26 Self reliance | 42 | 79.24* |
| 27 Media utilisation | 46 | 86.79* |

*Variables selected for the study

APPENDIX-VIII**Scoring pattern followed to measure credit orientation**

| | Response | Score |
|----|--|--------------|
| 1 | Borrowing and reborrowing money (cash/kind) from a public credit insitution after making timely repayment | 5 |
| 2 | Only borrowing money (cash/kind) and not reborrowing the the same through making timely repayment | 4 |
| 3 | Borrowing money (cash/kind) from a public credit institution and reborrowed in some other firms | 2 |
| 4 | Borrowing money (cash/kind) delaying repayment but not borrowing again | 2 |
| 5 | Borrowing money (cash/kind) from a public credit institution and remaining defaulter in repaying the same for long time | 1 |
| 6 | Borrowing money (cash/kind) from more than one institution and repaying the loan in time | 5 |
| 7 | Borrowing money (cash/kind) from a credit institution, repaying it after borrowing money from some other institution and continuing the claim involving several credit institutions | 1 |
| 8 | Willing to borrow money (cash/kind) but could not borrow due to ignorance or some other reasons | 3 |
| 9 | Making efforts to borrow loan but could not borrow due to various reasons | 3 |
| 10 | Not willing to borrow money (cash/kind) from any public institutions due to various reasons | 3 |
| 11 | Borrowing money from only village money lenders and not from any public credit institution | 2 |

APPENDIX-IX

Socio-economic and personal profile of the respondents of the study

n = 240

| Sl. No. | Variable | Category | | f | % | Mean score |
|---------|---------------------------------|-------------------------|-------------|-----|-------|------------|
| 1 | 2 | 3 | | 4 | 5 | 6 |
| 1 | Age (in years) | Young | 22-40 | 92 | 38.33 | 47.20 |
| | | Middle aged | 41-51 | 58 | 24.17 | |
| | | Old | Above 52 | 90 | 37.50 | |
| 2 | Age at entry (in years) | Early | 19-30 | 95 | 39.58 | 30.03 |
| | | Late | Above 31 | 145 | 60.42 | |
| 3 | Education (Score) | Illiterate | 0 | 0 | 0.00 | 4.96 |
| | | Low | 1-4 | 75 | 31.25 | |
| | | Midium | 5 | 88 | 36.67 | |
| | | High | 6-7 | 77 | 32.08 | |
| 4 | Monthly income (in Rs.) | Very low | 1000-1061 | 2 | 0.83 | 13553 |
| | | Low | 1062-10407 | 129 | 53.75 | |
| | | Moderate | 10408-20172 | 69 | 28.75 | |
| | | High | 20173-42616 | 31 | 12.92 | |
| | | Very high | Above 42617 | 9 | 3.75 | |
| 5 | Family background (score) | Nuclear & farming | 3 | 102 | 42.50 | 3.12 |
| | | Nuclear & nonfarming | 2 | 39 | 16.25 | |
| | | Joint & farming | 4 | 68 | 28.33 | |
| | | Joint & nonfarming | 3 | 31 | 12.92 | |
| 6 | Occupational status (score) | Primary | 1 | 37 | 15.42 | 1.84 |
| | | Primary & subsidiary | 2 | 203 | 84.58 | |
| 7 | Economic status (score) | Low | 4-8 | 69 | 28.75 | 10.10 |
| | | Medium | 9-11 | 80 | 33.34 | |
| | | High | 12-15 | 91 | 37.91 | |

Contd.

Appendix-IX. Continued

| 1 | 2 | 3 | | 4 | 5 | 6 |
|----|---|--|-------|-----|-------|-------|
| 8 | Scientific orientation (score) | Low | 12-19 | 28 | 11.67 | 23.95 |
| | | Medium | 20-25 | 118 | 49.17 | |
| | | High | 26-30 | 94 | 39.16 | |
| 9 | Deferred gratification (score) | Low | 1-2 | 26 | 10.83 | 4.90 |
| | | Medium | 3-6 | 195 | 81.25 | |
| | | High | 7-8 | 19 | 7.92 | |
| 10 | Vocational diversification (score) | Enterprise only | 1 | 37 | 15.42 | 2.07 |
| | | Enterprise + one additional occupation | 2 | 148 | 61.66 | |
| | | Enterprise + two additional occupation | 3 | 54 | 22.50 | |
| | | Enterprise + three or more additional occupation | 4 | 1 | 0.42 | |
| 11 | Self confidence (score) | Low | 3-6 | 71 | 29.58 | 7.47 |
| | | Medium | 7-8 | 91 | 37.92 | |
| | | High | 9-10 | 78 | 32.50 | |
| 12 | Self concept (score) | Low | 23-30 | 84 | 35.00 | 31.90 |
| | | Medium | 31-33 | 74 | 30.83 | |
| | | High | 34-40 | 82 | 34.17 | |
| 13 | Closeness with support system (score) | Low | 4-9 | 58 | 24.17 | 13.18 |
| | | Medium | 10-15 | 107 | 44.58 | |
| | | High | 16-30 | 75 | 31.25 | |
| 14 | Orientation towards competition (score) | Low | 12-14 | 56 | 23.33 | 16.33 |
| | | Medium | 15-18 | 147 | 61.25 | |
| | | High | 19-22 | 37 | 15.42 | |

Contd.

Appendix-IX. Continued

| 1 | 2 | 3 | | 4 | 5 | 6 |
|----|-------------------------------------|---------------|-----------|-----|-------|-------|
| 15 | Credit orientation (score) | Low | 1-3 | 112 | 46.67 | 3.63 |
| | | Medium | 4 | 40 | 16.67 | |
| | | High | 5 | 88 | 36.66 | |
| 16 | Rational orientation (score) | Low | 1 | 55 | 22.92 | 1.92 |
| | | Medium | 2 | 149 | 62.08 | |
| | | High | 3 | 36 | 15.00 | |
| 17 | Training experience (mandays) | No experience | 0 | 161 | 67.08 | 2.29 |
| | | Low | 0.6-1.37 | 21 | 8.75 | |
| | | Medium | 1.38-6.18 | 42 | 17.50 | |
| | | High | 6.19-52 | 16 | 6.67 | |
| 18 | Self-reliance (score) | Low | 2-3 | 65 | 27.08 | 3.89 |
| | | Medium | 4 | 132 | 55.00 | |
| | | High | 5 | 43 | 17.92 | |
| 19 | Media utilisation (score) | Low | 3-9 | 92 | 38.33 | 10.62 |
| | | Medium | 10-12 | 77 | 32.08 | |
| | | High | 13-15 | 71 | 29.59 | |

ENTREPRENEURIAL BEHAVIOUR OF AGRI-BUSINESS OPERATORS IN KERALA

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ABSTRACT OF THE THESIS

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KERALA, INDIA

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ABSTRACT

A study was conducted with the main objectives of developing index for measuring entrepreneurial behaviour and agri-business performance and identifying influence of behavioural and situational characteristics on entrepreneurial behaviour.

The study was undertaken in Central NARP Zone of Kerala, covering 240 agri-business operators. The agri-business operators were categorised into three groups viz., commercial farmers, on-farm and off-farm agri-business operators with 120, 60, 60 as sample size respectively.

Entrepreneurial behaviour formed the dependent variable for the study. Agri-business performance was selected as criterion variable. Nineteen independent variables were selected in relation to the objectives based on review of literature and pilot study. Correlation analysis, principal component analysis and factor analysis were employed for data analysis and interpretation.

Ten dimensions were identified and used to develop entrepreneurial behaviour index. Factor analysis revealed that innovation proneness, achievement motivation, risk orientation, economic motivation, management orientation and personal efficacy were the important dimensions to measure entrepreneurial behaviour which can be grouped into a single factor termed 'entrepreneurial behaviour efficiency'.

Agri-business performance was measured using the indicators viz., capacity utilisation, hired labour, cost-benefit ratio, perceived profitability, labour relationship, extent of diversification and social contribution from enterprise.

Majority of the respondents exhibited moderate to very high entrepreneurial behaviour, whereas they had high to very high agri-business performance. Comparison of the three categories of respondents revealed that there was no difference among them with respect to both entrepreneurial behaviour and agri-business performance.

Age, age at entry, scientific orientation, vocational diversification, self confidence, self concept, orientation towards competition, rational orientation, self-reliance and media utilisation emerged as most important variables in predicting the variation in entrepreneurial behaviour of agri-business operators.

High rate of interest, seasonality of demand, high cost of raw material, scarcity of electric power, high labour cost, ineffective consultancy service provided by the government agencies were the major constraints perceived by agri-business operators in influencing the entrepreneurial behaviour.

The study established the relationship between entrepreneurial behaviour and agri-business performance which brings out the need and importance for organising Entrepreneurship Development Programme for farmer entrepreneurs.

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